The Builder.

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The Influence of Improvements in Artillery on Human Habitations.

SO great is the perfection to which modern science has brought the telescope that the surface of the moon is now allotted to separate observers, and a map of that satellite is in course of preparation on which it would be easy to denote such physical changes as have been effected in recent times in the volcanic districts of our own planet.

If we were to suppose the point of view to be reversed, and that observations could be made from a spot so far removed from the earth as to permit distinct examination of its surface, without the means of holding any direct communication with its inhabitants, it is probable that the marks which human industry is now making on those portions of the world which are inhabited by civilised men would lead the observer to conclude that some marked and striking change had occurred in human affairs, and in the relations of mankind to their terrestrial abode.

If we suppose the observations to be made from a point so far distant that the military movement of masses of men, the smoke and the confusion of battle, the glare of the nocturnal illumination of great cities, and the frequent and steady transit over the aqueous portions of the planetary surface of the black clouds that designate the track of ocean steamers would be but faintly visible, the attention would be forcibly called to the long and numerous lines traced with geometric exactitude over the less accidented parts of the land, and evidently linking together the various centres of human activity by some new method of communication.

Another sign of the present time, less readily intelligible than the growth of the iron web, would be found in the gradual disappearance of some of the most ancient marks of the warlike character of mankind, the fortifications of their great cities. The inference to be drawn from the disappearance in so many parts of the world of the defensive works of the busy centres of life would be that an age of peace and amity had at length commenced upon earth.

The inference would be natural, but it would be untrue. But how unable would any philosopher who was unacquainted with the whole state of the case be to conceive that it was the steady increase in the offensive power of military engines that led to the destruction of fortifications from Naples to Bombay, and that the castles of the Angevin monarchs, as well as the defences erected since artillery first played upon masonry, have been dismantled, not because their protection was unnecessary, but because it had become inadequate.

Human abodes have two chief functions to fulfil,—that of protection from the elements, and that of protection from violence, whether of man or of beast. The first requisite will depend principally on climate, and to the extent to which it rules the characteristics of building, architecture will have a geographical or climatic character. The second requisite will depend on the nature of the offensive power against which it is intended to guard; and it will, therefore, vary with the advance of physical science as applied to warlike purposes. It will thus be more essentially historic or chronological. Thus, if we compare the difference between early and late buildings of a civil and of a military character, we shall be at once struck with the slow change in the architectural characteristics of the former as compared with the rapid modification of those of the latter description; or perhaps it may be more accurate to say, with the permanence of architectural as compared with engineering features. Our noblest and most venerated sanctuary has been so faithfully preserved from the time of the Plantagenet, and again from that of the Tudor dynasty, that the restorations effected by the great architect of the time of the Stuart sovereigns are blots upon its beauty; and it is only by the most faithful reproduction of every detail of the work of the original artists that the ablest architects of our day would consent to defend Westminster Abbey from the further ravages of time. But the walls of Chester, from which the second Stuart king looked down on civil war, are now regarded only as antiquarian curiosities; and fortifications of far later date bid fair to be superseded by mere earthworks.

The fact is, that the tremendous and yearly-increasing range of projectiles, and the corresponding increase in the weight of guns, are revolutionising the art of war. And not only is this the case in the tactical movements of armies, and in the actual shock of arms, but in the selection of strategic points, and in the whole theory and physiognomy of fortification. No wall will resist the breaching artillery that sea transport can bring to bear upon it, nor even that which command of the means of transport over ordinary roads will place at the disposal of the assailant. And it is becoming daily more difficult to find any sure protection against these, except that which is afforded by the very bowels of the earth. Earthwork lines, therefore, and casemates sunk in the solid rock, will be henceforth regarded as the proper defences of important strategic points; and to this must be added the selection of a position so far from the seaboard as to render shelling from floating batteries impossible. To cover dock-yards and naval arsenals, it will of course be necessary to arm proper batteries,—whether fixed or floating has yet to be determined. But that those great military points, the possession of which is necessary to the occupation of a country, will be designated by such conditions as above described, there seems no room to doubt. The sieges of Sebastopol and of Gaeta, and numerous incidents of the American war, furnish ample and positive information in this respect.

Remarks of this nature may perhaps seem of less practical value to many English readers than to those who have been familiar with the scenes of recent warfare. But in the not impossible event of a European war, considerations of national and of personal security will come home to every thinking man. The conditions of attack and of defence are now changing with a rapidity that is without precedent; and the result of the improvements which science is daily effecting in warlike implements, is as yet extremely uncertain. The history of war hitherto shows the increasing preponderance of offensive over defensive power. For a time, indeed, we have seen the defence prevail, and the science of offence remaining stationary. Such was the case from the time of the first employment of plate armour, as an improvement on chain mail. So long as the lance of the knight, the axe of the man-at-arms, and the arrow of the archer, remained the most formidable offensive weapons, the knight was safe in his panoply, and could safely disregard great disproportion in the number of unarmed assailants. But as soon as small-arms made their way into military service, complete armour, ceasing to be a protection, became only a burden and a disadvantage, and we find the jack-boot displacing the jointed iron armour of the legs, and the riveted iron casing replaced by a light cuirass, intended only to turn aside the blow of the sword. At the present moment our naval armaments may be regarded as in a condition similar to that of the knight at the time of the revolt of the "Jacquerie." So impervious is the casing of the latest iron ships to the artillery at this moment opposed to them, that a single armed monster of this description would safely run the gauntlet of a whole fleet of those first-rate men-of-war, the broadsides of which were so irresistible in the time of Nelson. It is more than probable that the attention now given to artillery will produce guns and projectiles able to pierce the strongest iron shell that the laws of flotation will allow for the sides of a ship; and so soon as that is certainly and pretty generally the case, the iron war-vessel will be laid aside for the same reason as the iron armour of the knight; but in the mean time iron vessels are an absolute requisite of national safety.

If England were engaged in war, ships and guns being what they are, the effect of the increased range of projectiles would soon be felt, or, at least, feared, on the seaboard of the belligerent countries. Such a town as Dover might, it is true, find safety under the guns of her castle; but what would be the security for such a place as Brighton? A prolonged war, under existing conditions, would drive the mass of the coast population beyond reach of shells thrown from the sea; and in inland or continental districts the chief safety of a town would be found to consist, not in works of circumvallation or in strength of citadel, but in distance from those detached forts which will become the keys of of defence and of occupation.

There is yet another consideration, and one that is as startling as it is novel. Since the days of Van Tromp, the only question that has ever been raised as to the defence of London has been that of resisting a land attack. The tried experience and profound military science of the great Duke of Wellington only led him to wish to provide for the case that would arise if an enemy were to obtain such a maritime superiority, if only for a short period, as would enable him to throw a considerable body of men on the coast. The plans discussed for the defence of London in such a case were exclusively military plans. Nor was it needful, in the lifetime of the Duke of Wellington, to make any provision against an attempt to ascend the Thames. Field artillery would have been available in such a case, and any vessels that attempted to ascend the river, even if they were unopposed by naval means, would have been riddled by guns from the land, and taken as in a trap.

But the case is now widely different. The effective portion of the fleet—that is to say, the iron vessels—is limited in number by its enormous cost. The naval strength of each belligerent in this respect would be pretty accurately known. Now, supposing such a naval engagement to occur as should cripple our iron vessels (and were they to go into action with their present supplies of iron shot to meet the steel projectiles of other nations, "cripple" would be too mild a word to describe the result), where would be the defence of London? Iron vessels cannot be improvised, neither can they be resisted by any but their like. One iron vessel unopposed in the Thames would destroy Sheerness, Chatham, Woolwich, and dictate its own terms to London. Three days of such an invasion would be more destructive than three months of the most formidable invasion contemplated by the Duke of Wellington. The American war has given us lessons on this subject that we shall do well to heed in time.

There seems every reason to suppose that a considerable change in the conditions of human abode will be a consequence of the improvements which are now taking place in artillery. Railways have done much to alter the mode of city life, and are likely to do much more, whether in scattering a dense population over a district of continuous villages, such as we now see rising in so many districts round London, or in connecting towns that may become centres of abode with those that remain merely centres of commerce and of business. The civil and the military features of city architecture will become more distinct and more widely separated; and the object of the rulers of countries likely to become the theatres of war will be so to dispose the chief strategical points as to offer no excuse for bringing on an unarmed population the horrors of a bombardment. That the whole arrangement of the armies of Europe will be recast, that heavy cavalry has become useless, that greater rapidity of motion will be the chief requisite of troops in the field, and that the proportion of artillery to other arms will greatly increase, is the opinion of men well competent to judge the subject. That the present condition of the art of war is one of transition there can be little doubt; but the change that has taken place in artillery since the time of Napoleon has already been such as to modify the old rules of sieges and of battles, and the degree to which non-combatants, and especially those who are inhabitants of great cities, will, in the event of war, be affected by this change, is a question to which it seems to us that attention adequate to its importance has by no means hitherto been directed.

CHURCH WARMING IN THE NORTH.

One of the most difficult tasks that fall to the architect's lot is to warm a church comfortably, securely, at small cost, and with due regard to ecclesiastical propriety. That a church should be properly warmed is not, perhaps, of so much importance in the south of the kingdom as in the north, where, to sit in a fireless building for two hours, in a hard frost and an east wind, is a penance even to the strong. As a collection of facts bearing upon any given subject is often the means of illuminating it, we give the attempts at church-warming that have been made by the clergy and churchwardens of some of the churches in an archdeaconry in our northernmost county. We must premise that a Northumbrian summer is locally acknowledged to consist of "three hot days and a thunderstorm;" and that all the rest of the year is winter, variegated by high winds, nipping winds, frost, snow, hail, mists, and rain. Notwithstanding this severity of climate, it is too often the practice to leave churches locked up from the hour they are closed on Sunday evenings till the time they are opened to be swept out on Saturdays. That they should become under this treatment the prey of damp, mildew, and mustiness, ought not to astonish anybody. Yet we know this state of things to be generally looked upon as a most lamentable, unaccountable, and incurable marvel. It is not likely that one of the persons shrugging their shoulders, shaking their heads, and turning up their eyes at the spectacle of a damp church, would think of shutting up their own houses in the same manner even for a few months; they would urge that everything in them would become mouldy, ricketty, mousey, moth-eaten, or worm-eaten, or otherwise deteriorated in value according to its material. Yet in ninety cases out of a hundred, this is the plan pursued with churches, year after year, year after year. The grand mistake lies in the supposition that a church can be treated, in this respect, with less care than any other fabric. Who is not shudderingly familiar with the cold damp smell that issues from a country church as the person entrusted with the keys, and the duty of showing it to strangers, pushes the door slowly back on its usually rusty hinges? One is apt to think it is the smell of the dead, buried in old times within the fabric; others, more imaginative, attribute it to "the decay of ages," whatever that may mean; but, in point of fact, it is the smell of neglect, or precisely the same smell that any building would have that was treated in the same manner.

The modes of church warming adopted in the North are very limited. The choice, with very few exceptions, seems to be between stoves with ascending flues and stoves with descending flues; and most preference is shown for the former. Accordingly we find the long black leg of a flue, to which the stove appears the distorted foot, striding half-way across most of the church interiors we have examined, while the termination of the flue on the exterior gives a caravan air to that portion of the edifice through which it pierces. In some cases these stoves are not lighted till Sunday morning; in others it is found that this quantity of heat is so insufficient to dissipate a week's damp that they are lighted on Saturdays, when a good fire is made up at night, and the edifice left to its fate, which, in one recent instance, at least, at Shilbotell, resulted in the over-heated flue setting fire to some woodwork close at hand about midnight. In this case the utter destruction of the church might have taken place, were it not for the circumstance that the village inn turned out its last loiterers at that hour, and they, perceiving the flames in the church, roused assistants, and put out the fire. We know of one case only where the warming of a church, used only on Sundays, is commenced on Fridays. This superior piece of attention is practised at Ponteland. The reason given for the general rigid economy of fuel in a coal county where the price of coal varies from 5d. to 6½d. the cwt. at the pit's mouth, is the same as would be advanced in less favoured districts—the expense. Ponteland Church also caught fire not long ago, in consequence of the flue drying the surrounding timber to ignition point. Here the plan of an underground furnace has been adopted from which run stone flues beneath the aisles, having gratings above them to assist in the distribution of the heat. When the products of combustion have passed for some hours down one aisle, a door at the entrance of the flue is closed, and another opened, which directs it down another flue laid in another channel. Both flues terminate at the same point; and thus, having traversed the length of the church, the smoke, &c., escapes up a chimney built against the tower the position of which, by the bye, is so carelessly chosen as to block up an ancient Norman doorway.

In Chillingham Church another plan is tried. Here huge hot-water pipes lie on the pavement in the ambulatory and ascend the chancel step like a black sea-serpent taking sanctuary. This awkward arrangement warms the somewhat small church, but is most unsightly.

One of the plans approaching nearest to success is pursued at Lesbury. Two underground chambers, about 5 ft. square by 4 ft. deep, have been made in this church,—one beneath the chancel pavement, the other at the west end of the nave, in each of which is placed a square iron stove, similar to those used by joiners and in laundries. From these, below the pavement, proceed iron flues, which cross the church and discharge themselves out of stone-built chimneys, on the north aisle wall. The steps leading down to these furnace-chambers, as well as the long narrow beds, lined and paved with stone, in which the flues are laid, are covered with ornamental gratings, which, of course, present no obstacle to the passing to and fro of the congregation. When it is necessary to attend to the fires the person in charge merely lifts up the grating over the steps and descends, closing it again at the conclusion of his task. These stoves and flues can be got up to red heat, if required. Precaution is taken against this extreme heat by making the flue in stone when it passes under pews, or near other woodwork. The drawback here—for there is one—is, that as the outlets of the flues are on a low wall, so as to be out of sight of the village which lies on the other side of the church, they smoke in some winds.

At Eglingham, the parish of the Archdeacon of Lindisfarne, there is a tubular boiler, in a kind of shed built at one side of the chancel, whence proceed pipes carrying hot water along the centre ambulatory, below ground. The boiler is supplied by a ball-cock cistern,—which is, however, filled by hand; and there is a safety-valve, and every precaution against accident in the way of instructions to the person in charge to fill the cistern before he heats the water in the boiler. Still, it is not conducive to a calm and dispassionate state of mind, whilst listening to the sermon, to know that carelessness on this attendant's part, or his illness, with compulsory performance of his duties by an inexperienced stranger, might lead to an explosion.

On the building of St. Paul's, Alnwick, by the predecessor of the late Duke of Northumberland, a hot-water apparatus, costing some hundreds of pounds, was laid down by a metropolitan firm. This utterly failed. Stoves were then tried, whose shining black flues ascended towards the roof, and then abruptly turned off, in elbows, in the direction of the windows through which they passed. These were, of course, miserable eye-sores in a handsome building. They are now superseded by the plan of lighting the gas in all the floriated standards in the chancel and corona in the nave, which gives the interior, with its grand Munich window, a rich and jewelled appearance; but raises the question, whether it is the correct thing to treat day as night. At the west end there is a large Gill stove.

Elsdon Church is another instance in which the underground plan has been tried. This has a heating-chamber at the angle of chancel and north transept, with a grating covering the apparatus up the central ambulatory. As this has not been superseded it is possible that it is deemed more successful. But this edifice is so damp from overflowing water-butts planted against it, that all heating must result in steam.

When the Norman church at Rock was restored about ten years ago, the difficulty of heating was not grasped; but the cold being too severe to be overlooked, a small stove has been introduced in the chancel and another in the vestry, for which two stone chimneys have been built on the most-seen side of the church. These chimneys were at first kept low, so as not to offend the public eye; but, not answering, were heightened: as they still did not answer, that is to say, the smoke did not ascend them properly, tall funnels have been added to both, much to the deterioration of the general effect of the building. It is of no use shirking the matter. Churches in severe climates must be warmed: the only question is, which is the best way to do it? It is more economical to make provision when building or restoring than to postpone the expense, and have to make a second work of it.

At Branxton Church, adjoining Flodden Field, there is a common ship's stove in the centre of the nave, with the flue rising straight up from it, as in steamboat cabins, and passing out of the roof. This is not a plan of church-warming that will recommend itself to any churchwarden now-a-days. Edlingham, too, of Saxon foundation, has a stove in front of a pillar in the north aisle, the pipe of which passes through the roof. In the fine old church at Norham, an open fire has been boldly adopted at the west end. There are, however, two stoves with pipes in the aisles. As far as cheeriness and warmth are to be considered, there is of course nothing superior to the open fire in a properly-constructed grate; and the line drawn between the ecclesiastical fitness of these and stoves is quite arbitrary. If the exterior of a church is to be marred, as some would consider, with flues or chimneys, why not fearlessly make provision for open fires at once, with, perhaps, low-hooded fireplaces?

Bamborough Church has a square stove in the chancel, and another in the north transept. The interesting Norman church, with its Early English chancel, at Mitford, is warmed with a stove with a descending flue, placed midway in the centre aisle. The modern church at North Sunderland has no better expedient for warming than a stove at the chancel arch, which leaves the west end cold. Whittingham Church, famous for its Saxon tower, illustrated by Rickman, has adopted the comparatively good plan of making recesses in the walls at different points, for its three stoves. One of these recesses is on the north wall of chancel; another on the north wall of north aisle; the third on the south wall of south aisle, near the porch. This is an improvement upon the rule of placing the black, unlovely objects in the most conspicuous situation possible. Doddington Church has a stove exactly in front of the chancel arch, with another midway in the nave; and Carham Church, also, gives the ugly stove the most conspicuous position at disposal in front of the altar railings. Chatton Church, restored within remembrance, has been scarcely better considered, having a round stove in the centre aisle at the west end, and another at the east end of north aisle.

It will thus be seen that the art of church warming is at present in a very low stage of development. But it is a necessity that progress will compel us to grapple with and master. The hot-water processes require that the building should be air-tight, or the heating power is inefficient,—a state of things it is difficult to obtain, and scarcely desirable. Where, however, expense is no object, either for apparatus or for fuel, as in the case of St. Michael's, Alnwick, where the Duke of Northumberland pays all costs, and the scheme is considered from the beginning, and

the pipes and boilers made sufficiently large, and the water heated several times in the course of the week, this plan is found to answer well. Under other conditions it is a failure.

The hypocaust-like approximation of the underground furnace and flues is found to answer tolerably well in many instances, although subject to the inconvenience of not drawing well in some winds. Open fires in various parts of a church, with firebrick largely used in their composition, and ecclesiastical appearance considered in their design, have not yet had fair trial. But, apart from the contrivance with which the warming is effected, there should be a more general recognition of the abiding need in our humid climate of attending more studiously to the condition of our ecclesiastical fabrics. No church should be shut up for a week; and there are many, the situation of which imperatively requires that they should be cared for every day.

THE TREASURES OF NORFOLK

FOR THE "COMING" PORTRAIT EXHIBITION AT SOUTH KENSINGTON.

THE county of Norfolk, once extremely rich in works of art,—in early ages in its cathedrals, its churches, and its castles, in later times in the halls of its nobility and gentry,—has been sadly stripped. Less than a century since, the grandson of Sir Robert Walpole, Earl of Orford, the hated nephew of Horace of Strawberry-hill, had not sold the contents of Houghton to Catherine of Russia, shipping the Houghton of the first earl to the inaccessible Hermitage at St. Petersburg. Less than fifteen years since, Wolterton, in Norfolk, the seat of "Old Horace," has been stripped and van-loaded to the inevitable hammer that sounds so frequently and honourably in the great room of Messrs. Christie, Manson, & Woods, in King-street, St. James's, London. Yet, in spite of such art losses, and of others in art treasures, Norfolk has *not* been reduced to its reputation in dumplings all the year round, and its Leadenhall Market supplies of turkeys at Christmas. It has its unrivalled Lynn cup and its noble Lynn brass,—one of the very finest of brasses to be seen in England, rich as England is in sepulchral monuments.

Beyond its wealth in Mediæval art, Norfolk is rich in historical portraits,—portraits that will yield a fair harvest, if rightly gleaned. What the county possesses in this way, and will doubtless send to South Kensington in the spring of the present year,—the Royal Prince asking, the Earl of Derby (the President of the Exhibition) requesting, and his son, the noble member for King's Lynn soliciting,—form and supply the subject of this communication.

At Sandringham, close to the lobster-washed sands of Cromer (known in art by the loving and careful pencil of William Collins), the heir to the throne of Queen Victoria,—

"Of virtuous father virtuous son,"*—

has erected a palace, and is fast filling it (so rumour runs) with works of art.

It cannot, however, be expected that a hall of a young prince, both of yesterday's date, can be rich in early English portraits; of Plantagenets, Yorkists, and Lancastrians; of Tudors and of Stuarts; of Howards and of Gorings: so from royal Sandringham we shall drive to noble Holkham Hall, the seat of the Lord Lieutenant of Norfolk; no less a person than Thomas William Coke, second Earl of Leicester of the last creation.

Here, however, rich as Holkham is in works of art and its woods with game, we have no "preserve" of portraits to bag. We shall not find here a similitude *ad vivum* of Mr. Attorney-General Sir Edward Coke that we should "enter" for the keen criticism of a Kensington jury on a public day.

At charming Blickling, near Aylsham, we should knock and ask for the Vansomer portrait of Chief Justice of the Pleas, Sir John Hobart, of the time of James I., additionally interesting from its costume; then we should certainly carry away the curious and suggestive full-length portrait of Henrietta Hobart, Countess of Suffolk—the Marble-hill, Twickenham,—mistress of George II., and the friend and correspondent of the great Lord Peterborough, of Swift, of Pope, of Gay, and of Horace Walpole.

When at Fakenham, or Rougham, we should "haste, post haste,"—(as the old post-bagmen were often directed to haste, "on their lives,") to Raynham, the seat of John Townshend, Marquis Townshend, whence, after presenting a royal sign-manual warrant, countersigned by the Secretary of State for Home Affairs, we should carry away (with Horse Guards or Scotland-yard force, if necessary) the whole of the full-length portraits of eminent Englishmen who fought in the Low Country wars of Queen Elizabeth and King James, taking extra especial care of the two brothers, Sir Francis Vere and Sir Horatio Vere.

While in this neighbourhood, we should be proud to find anything like a *traditional* portrait of our famous Lady of Walsingham; or, while looking about us at Salle, we should be in ecstacies were we to stumble upon a genuine Queen Anne Boleyn, or even a Boleyn Viscount Rochfort. Hereabouts ask for "Quarterly Review" Elwyn.

At unfortunate Windham-haunted Felbrigg, we should be glad to fall on—by accident or otherwise—a portrait of the *statesman*, Mr. Windham, the friend of Dr. Samuel Johnson, and many distinguished men; the forthcoming publication of whose "Diaries" promise, by the samples we have seen, a treat for an April season, and an honoured place on the shelves of skilled collectors of readable works.

At Rougham once more, we hurry, still untired and athirst, for Houghton Hall, the stone-built mansion of "Bob the poet's foe," prime minister Sir Robert Walpole. The Walpole portraits are still here, and will well repay a visit, and more than a choice example, historically and biographically, for the Kensington exhibition. Are we presuming when we more than think that our readers will be pleased with knowing what the *Builder* is doing in this way?

First of all, in spite of its size, 6 ft. 10 in. high by 8 ft. 5 in. wide, we see a visionary van for carrying to Kensington, from the hunting-hall we are in, "The Hunting Piece" by Wootton, representing Sir Robert Walpole on horseback, his friend, Colonel Charles (Mrs. Oldfield's) Churchill well seated on his saddle. Sir Robert Walpole's face is well known, not so the portraiture of the white horse he is on, the horse being no other than the actual horse "Chevalier," taken in Scotland in "the fifteen" (1715), and "the only horse the Pretender ever mounted there."* Special trains from Culloden-Inverness to see this picture.

Then we should mark for removal the three-quarter of Sir Robert when "secretary at war" to Queen Anne, a highly-interesting portrait by Jervas, and by Pope's Charles Jervas in his happiest mood.

Still "hungry," we should set apart, in "The Little Bedchamber," Dahl's portrait of Catherine Shorter, Sir Robert's first wife, and the mother of the letter-writer Horace, who has *twice* mentioned this suggestive portrait. In his "Ædes Walpolianæ," the "Horry" of Pope's "Lady Mary" calls it "an exceedingly good portrait," and in his account of Dahl, in his "Anecdotes," he refers to it once more,—"In my mother's picture at Houghton there is great grace, though it was not Dahl's most common excellence." Portraits of the mothers of great men have an undefinable attraction. Horace Walpole's affection for his mother never forsook him; seventeen years after her death he erected a statue to her memory, in King Henry VII.'s Chapel in Westminster Abbey.

At *Narford*, in Norfolk, the seat of the Fountaines (so rich in old china collected in Queen Anne's reign), an Edward VI. and Queen Elizabeth to the knees, assigned to Sir Antonio More, should not be overlooked; nor should a believed-in Holbein of Queen Anna Boleyn be passed over hastily. A Sir Peter Lely painted De Grammont heroine or two may be found, and safely admitted as—good.

And thus ends these Norfolk "notelets" for Kensington use, or, as Sir Walter Scott's friend, Charles Kirkpatrick Sharpe, was used to call his really curious bits of information he was wont at times to send to the great poet, antiquary, and novelist,—

"Some Nothings for Sir Walter's use."

A paragraph or two more:—

Whilst the travelling *employés* of the Kensington Museum are scenting and scouring ducal Norfolk from north to south and from east to west, it should be part of their instructions (for their better information and guidance now and for others hereafter) to be on the look-out for portraits of "Norfolk worthies," of whose lineaments as they lived we know too little,—men like Bishop Joseph Hall and Richard Corbet, of Norwich; men like Sir Thomas Browne, of Norwich ("Religio Medici"), and Sir Roger L'Estrange, of Hunstanton, of whom many wish eagerly to know more. A genuine likeness of Poet-Laureate John Skelton, of the time of Henry VIII., would delight more people than his able editor, the Rev. Alexander Dyce; while a portrait of Phineas Fletcher, rector of Hilgay, in Norfolk, would be found acceptable to all who love the poetry of the age of King James I. A portrait of Professor Porson, a native of East Ruston, would be welcome to scholars.

To please elderly ladies, Dunham should be searched for a portrait of Cowper's Mrs. Unwin, "Mary" of the "needles,"—death took her at Durham. Norwich might be found to contain a portrait of Henry Headley, the poet and editor, who died there in 1788.

Stark and "old Crome of Norwich" might be noted usefully for other purposes than a London exhibition, which commences and expires in a London season. A characteristic portrait of William Wilkins, R.A., architect of the London University and of the London National Gallery, might be noted as a native of Norwich, in Norfolk; and, with all his waste of space in porticoes to let and corridors and passages that led to nothing, William Wilkins was—a skilled architect.

PETER CUNNINGHAM.

* Milton of Mr. Lawrence.

* A Description of the Pictures at Houghton Hall (Walpole's Works, ii. 241).

ARCHITECTURAL WORKS IN GERMANY.

Prussia.—At Berlin the Government are about to lay before the two Legislative Chambers the plans of a new Parliament House for their approbation, and to ask the Lower House for a pecuniary grant for the execution of the works. The intended site is the one hitherto occupied by the Porcelain Manufactory in the Leipziger-strasse. The front buildings of that establishment are proposed to be left intact, but to undergo various alterations, and then to be used as parliamentary offices; whilst a new erection, containing a hall of assembly for each of the legislative bodies, is to be built in the garden behind, but connected by wings with the building fronting the street. The plans and estimates in question are only of a preliminary nature, and have been made by Government architects connected with the Ministry of Commerce and Public Works. If the proposal meets the approbation of the Legislature, experienced architects are to be sent to London and Paris to study the arrangements in those cities, and to prepare more elaborate designs and detailed estimates. It is stated that the building of the proposed new Houses of Parliament will last five or six years; but a great deal of water will run into the sea before the plans and estimates are completed, and the foundation-stone laid. The new Exchange at Berlin is to be ornamented with a colossal marble statue of the present King of Prussia, the work of the artist Herr Siemering, who has just completed it by order of the well-known Berlin banker, Mendelssohn-Bartholdy (the brother of the late musical composer), who makes a present of it to his fellow-townsmen. The statue is to be placed in the vestibule of the new Exchange building. The Rauch Museum is nearly completed, and will be opened early in the spring. It is intended to contain exclusively the works of that celebrated artist, lately deceased, in imitation of the Thorwaldsen Museum at Copenhagen. A Paris paper, in lately giving a description of the building, and misled by the name,—*rauch*, in German, signifying *smoke*,—adds seriously, "Our Teutonic neighbours can do nothing without smoking, and have just raised a temple to sacrifice on its altars the inevitable cigar and the cherished pipe!"

Cologne.—The total receipts of the Domban Association, for the completion of the cathedral, amounted, in 1865, to 234,000 dollars, of which 106,000 dollars were raised by voluntary subscriptions, 175,000 dollars the proceeds of the lottery, 50,000 dollars the Government annual subvention, and 3,110 dollars from legacies. The committee have applied to Government for permission to get up an annual lottery for nine years more; and if granted, they hope by their own personal exertions to make the receipts amount altogether to 250,000 dollars a year for

the above period, by which time it is hoped and expected that the works will be finally completed, as the estimates for the remaining portion are still 2,250,000 dollars, which is just one-half of the sum that the railway-bridge over the Rhine at Cologne cost, the length of which is exactly equal to the height of the two towers of the cathedral if piled one on the other. The glass paintings for the two windows of the cathedral, — legacies from a deceased lady named Schnafhausen, and the late President von Wittgenstein,—have just arrived from Munich, where they were executed. They contain together eight figures of saints, and are spoken of as perfect models of the art of painting on glass, which was long supposed to have been lost, but has been now re-discovered by modern ingenuity, and is considered fully equal to the glass-paintings in any of the old cathedrals, both for stability and brilliancy of the colouring.

Aix-la-Chapelle.—The Polytechnical School at Aix-la-Chapelle, the building of which has been commenced, is to be finished by the autumn of 1868. The whole building, including the chemical laboratory, covers an area of 35,161 square feet, all covered in with arches of solid masonry. As compared with the extensive Polytechnic Schools of the south of Germany and Switzerland, the relative proportions stand as follows: — The Polytechnic School at Zurich, exclusive both of the laboratory and of the wing that connects the building with the university of that city, covers an area of 51,726 Prussian square feet; the Polytechnic School at Carlsruhe, 33,909; the Polytechnic School at Stuttgart, 22,711; and the Polytechnic School at Vienna, 16,700 ft. Thus it will be seen that the new Polytechnic School at Aix-la-Chapelle is only exceeded in extent of area by the establishment of a similar nature at Zurich. The celebrated professor of chemistry at the university of Munich, Baron von Liebig, has been officially consulted as to the most practical way of fitting up the chemical laboratory in this new institution, which is to be called "The Rhenish-Westphalian Polytechnic School."

Saxony.—The restoration of the Church of St. Sophia, at Dresden, is progressing rapidly, as the works have not been hitherto interrupted, owing to the extreme mildness of the weather this winter. The new front which is being added to the original structure, and contains a double portico, is 88 ft. in width, and has now been brought up to such a height as to admit the lengthened roof of the church being extended over part of it, whilst the rest will be carried up higher, as it is to terminate in two towers. ——Subscriptions are being made among the Polish residents at Leipzig for the purpose of purchasing the plot of ground on which stands the monument of Prince Poniatowsky, who, twice wounded at the battle of Leipzig (October 18, 1813), was eventually drowned in attempting to cross the Elster, on the retreat of the French army after that decisive action. The owner of the so-called Reichenbach Garden, in which the monument was erected, being dead, the ground has been purchased of his heirs for building purposes by speculators, who offered the monument for sale to the Emperor of the French; but, as he has declined to purchase it, the Poles are taking the matter in hand in order to preserve the memory of the deceased prince, whose name is written on one of the brightest pages of their country's history.

Bavaria.—The subscriptions that are being made for the erection of a second Protestant church at Munich have proved eminently successful. Amongst the latest donations received is one of 1,000 florins from the venerable ex-King Ludwig I.

THE LATE JOHN GIBSON, SCULPTOR.

The north-east wing of Trafalgar-square, Charing-cross, in London, may well go into mourning. In the December of the year so newly closed died Sir Charles Eastlake, president of the Royal Academy of Arts in London, who dedicated and devoted a life of many years to Italian art, working with the *Devonshire* strength and soul within him to the seemingly hopeless task of reviving an extinct race of "Virgin and Child" painters, of "Crucifixions" and "Entombments." "The genius and the faculty divine"* (clever, accomplished, and resolute as he was) were not within him. And now this January of 1866 has brought the intelligence, not unexpected, that fair Italy has taken from among us a great English sculptor,—born an artist,—trained in academies and schools to be a sculptor, and in his way not soon to be forgotten,—a man who gave his "nights and days" —not to Addison and Steele, or Shakspeare and Milton—but to Phidias and Praxiteles, to Canova, Flaxman, and Thorwaldsen; and has left behind him many statues that will long remain, in conception and execution, monuments of reproductive and re-heated or revived art.*

Caernarvoned-Conway, in North Wales, was the birth-place of Gibson. The three-plumed principality had done nothing for art—through her Llewelyns, her Fluellins, and high-born Hoels, her Morgans and her Wynnes, until she gave birth amidst her mountains and her beacons to Richard Wilson, our English Claude. Since then poetic Wales can justly boast of giving birth to 'Gibson of Rome," as he loved to be called, though "Gibson of Wales," a like unregistered distinction, was always dear to his heart.

John Gibson was born in 1790, at Gyffin, near Conway—the son of William Gibson, gardener, of the parish of Gyffin, and Jane Roberts, his wife. He was baptized on the 19th of June in that year. His age at his death is therefore easily calculated. The art of sculpture is a healthy occupation.

From Wales he made his way to Liverpool through the kindness and liberality of his father's master, a Griffiths of good family. In princely Liverpool he was apprenticed—like Chantrey, at Sheffield, before him—to a carver in wood (or cabinet-maker, or carver and gilder). His masters' names—such minutiæ well merit preservation—were Messrs. Southwell & Wilson.

While an apprentice, the sculptor-to-be of "The Tinted Venus," is said to have modelled in wax a figure of "Time," with the usual attributes assigned to that allegorical old gentleman, who has been found in running a race with man not to be "subject to any contingencies."

A love of nature, of infancy and innocency, was innately pure (as from a fountain head) in our great sculptor. A little anecdote will illustrate what we say. When Gibson was day and night at work on the statue of Her Majesty for the House of Lords, he was frequently at "our palace," and sanguine friends would twit him touching a "knighthood" near at hand. That Gibson coveted knighthood none of his friends believed. Whatever expectations they may have had, came soon to an end. A pretty little princess of the blood, an "Alice Maud," or an "Helena Augusta," or a "Louise Caroline," or a "Beatrice Mary Victoria," came, like one of Sir Joshua Reynolds's children, all nature and art, into the room to see "our Phidias" at work. The sculptor, delighted with what he saw, snatched (Hector like) the little Astyanax to his arms and kissed the child. *Exit*—etiquette outraged—sculptor Gibson from "our palaces" at St. James's and Pimlico, and our castles of Windsor, Edinburgh, &c., for evermore.

Nollekens's John Thomas Smith justly boasted, during a long life, that he had been patted on the head by Dr. Johnson, and kissed by blue-stocking Mrs. Montagu. We do not believe for a moment that so great a lover of art as her Majesty is well known to be, had aught in the world to do with the anecdote we mention.

While in Liverpool, his skill and enthusiasm attracted the attention of Washington Irving's *Lorenzo de Medici*, Roscoe. The *Chantrey-statued* Roscoe called the attention of Michel-angelo Taylor to young Gibson, and with this result, that Liverpool was left (1818) for London. Nollekens and Flaxman, and Chantrey (with his Lichfield Children, and Lady Louisa Russell fondling a Bird), were then the leading sculptors in London.

From London, with "letters of introduction," and, better (perhaps) still, with "letters of credit," he made his way (1820) to Rome. In the Eternal City he drank deeply of the "undefiled well,"—acquired the friendship of Canova, and the approbation of Thorwaldsen.

Such approval called the attention of the late princely Duke of Devonshire to the then modest studio of the hardworking and enthusiastic and still-improving sculptor. A commission was the result,—the "Mars and Venus" in marble known and admired by all who know Chatsworth.

Wilkie's "Reading of the Will"—King of Bavaria loved art, and a commission to Gibson followed. The name of Gibson as a great English sculptor is held in high esteem in Munich.

In his thirty-second year our Praxiteles from Wales was seen in Rome by that fine-souled and noble-minded English gentleman, Sir George Beaumont, the friend of Coleridge and Wordsworth, of Chantrey and of Wilkie, whose proffered gift of his pictures to the nation was the splendid bribe that led to the purchase of the Angerstein Collection for the National Gallery of Great Britain and Ireland. What so correct a judge (who could not be mistaken and would not lie) thought of Gibson at this time (1822) he expressed in a letter from Rome to Chantrey. The words are remarkable:—

"I have given a commission to Gibson; he seems to me to have great merit, and his composition, I think, will please *you*. He is modest and assiduous, with much taste, and, I think, will do us great credit."

"Us," means England. Was Sir George mistaken?

A *rapt* enthusiast in his art, he was *wrapt* up in his art. Conceptions, in no way *misconceived*, crowded his thick-coming fancies, until he became afraid at times of losing the shadow of his well-earned reputation. Yet his name was well known within and without Somerset House, in London, where the bust of Michelangelo does now unnecessary work (yet we would not remove it). In 1833, the Royal Academy admitted him an A.R.A., and in 1836 a *full* Royal Academician.

Works that more than justified his election followed quickly. His *first* statue of Huskisson (in the St. James's Cemetery, at Liverpool) pleased better judges than Liverpool men. His *second* statue, of the same statesman (of bronze, and 9 ft. high), confirmed his reputation. His *third*, at Lloyd's, in London, is liked by the worthies there.

Pleased, but not satisfied, with what he had done, and what he was about, he returned to "Sappho" and "Aurora," and "Hebe" and "Proserpine"—

"All standing naked in the open air,"

and to "The Hours and Horses of the Sun," but quitted them quickly for more remunerative "portrait-statues." Dead men find means for artists to live.

Mr. Gibson was happily seen to advantage in the "London International Exhibition" of 1862. His marble "Venus," coloured or tinted, attracted admirers and approvers of all kinds,—

"For fools *admire*, but men of sense *approve*."

Viewed in any light, and by any theory, the "Tinted Venus" of our island-born Gibson is a fine statue,—a seaborn goddess in "antique" born three thousand years after her time. Mr. R. Berthon Preston was in 1862 the much-to-be envied owner of this noble work of art.

Flaxman kept aloof from attempting a "Venus."

Gibson's full-length, 7 ft. high, standing statue of Sir Robert Peel, in the north transept of Westminster Abbey, has many merits. All who love art, all young men who study art as a profession, should contrast Gibson's "Peel," with its companion statue of "Canning," by Chantrey. Merits and defects are obvious in both — we prefer the Canning.

The portrait-statue of her Majesty, Queen Victoria, is a fine example of modern art that will *survive*.—barbarous Huns, and Goths, and Vandals allowing. The tints are introduced with taste, and the statue has that "lion-port" which 'speaks a queen.

THE DEVELOPMENT OF STYLES: EARLY ENGLISH.

The round arch Norman style had undoubtedly attained in England, in its later days, to a very high degree of elaborateness, both in combination of constructive forms and in decoration: these are leading characteristics of the Early English style that, immediately succeeding it, remained imbued with much of the characteristic Norman feeling, and in many respects was but a heightening and a refinement of already declared Norman motives and tendencies; and yet there has seldom, perhaps never, been a more sudden and complete change of style in any art than signalised the translation or transformation of Norman into Early English. It may well have been that eyes accustomed so long to the nu-

* Wordsworth.—"How many are the poets that are sown by Nature," &c.

* There is an excellent engraving of his "Tinted Venus," by W. Roffe, in the *Art Journal*.

merous and grand examples of Norman interiors with their spacious spans, their broad arches, their long lines of even columns or columnar piers, and horizontal stretches of super-imposed and well-distinguished stories, were not prepared at once to break with all the ties and traditions of their national experience; and so the new architecture remained an architecture of stories rather than of compartments, of broad openings or groups of openings, rather than narrow; and while the novelty of the pointed arch was freely introduced, the consequent requisites of thoroughly revised proportions and distributions to accord with its genius were repudiated entirely or timidly tolerated, or degraded by a compromise that deferred a change that should have been allowed at once. The Norman style itself seems to have made some attempts to retain position by assimilating certain cardinal innovations. The prime proportional modification of giving a preponderance of height to the pier arches and openings as compared with the height above, was adopted with more boldness than well-studied effect and happy result at Gloucester; and at Oxford Cathedral we see the same attempt in another and rather curious form, where, instead of the triforium story being lifted up above the summits of the more lofty piers, it is left in position, and the cylindrical piers push upwards and past it, absorbing its proper divisions, and so leaving the story to take bearing as best it might on the sides of the invading and intrusive cylinders.

But the new movement admitted of no permanent or extensive compromise; in a very few years the mighty round arch style that had covered England in the space of a century with monuments, that have such important representatives surviving to this very day, came to an end as a style either of perfected or progressive development, and new fashions reigned, and reigned absolutely, in its stead.

The characteristics of the new style that were sufficient to cast all that was retained of the old into obscurity, if not oblivion, are—

1. The substitution of the pointed for the round arch, all but universally.

2. The largely indulged affection for marble pillarets and shafts, attached, free, and clustered, and even an exaggerated preference for slender proportions in place of the antecedent thick-set.

3. A more refined feeling for appropriateness and delicacy in the profile of mouldings especially displayed in the numerously elaborated suites of archivolts, and with a marked preference for the mouldings of the Attic base, both for bases and circular capitals.

4. Supercession of proper Norman decorative mouldings by restriction to one or two types—the dog-tooth, &c., supplemented by an entirely novel style and type of sculptural foliage lavished upon capital and corbel,—the so-called stiff-leaf, properly stiff-stalk and lobed trefoil foliage.

The extent and suddenness of this transformation were due first to a quick inrush of architectural ideas and models from continental districts, where the art had made progress far in advance of disordered and retarded England; and then to the fact that the resources and organization and self-confidence of England had advanced so rapidly within a very few years, as to be able to leap at once to almost the foremost line of architectonic advance, and at least assert for itself a proper action upon all that it adopted,—an action of reserve as to how much of its old traditions it still chose to stand by,—an action of taste, when we may not rather say caprice as to what changes it would make in its adoption, and what combinations of the remotest models it should be pleased to make essay of, and hold hard on by.

As regards the pointed arch, it had been already not merely invented and adopted in France, but employed with such consistent and instinctive feeling for its artistic value and import as pronounced it the key and characteristic of a proper style. Our predecessors in architectural archæology were wont to make large excursions around the question of the invention of the pointed arch, as their central subject of curiosity; and this general galloping-ground still exercises some adventurous spirits, ever greeting each other as they return but to take a fresh departure, with confident annunciations of "Lo here! lo there!" It may be feared that it is past hope for us to be enabled ever to point out "with finger straight" the one discovery that would go to the root of the matter,—the one man of genius who first penetrated so happily to the spirit and meaning of the motive of the pointed arch, and gave it such monumental enunciation that thereafter its individuality of life was secure, and it opened out safe for ever upon the clear progressive development which has made it a glory and a decoration for the world. It is something that we are able to limit, by not too lax a cordon, its geographical and historical place in the north-west province of France and in the twelfth century.

With respect to general origin, the pointed arch had many, and independent. It occurs casually in such instances as in the interlacing of Norman circular arcades. A more important though in itself equally casual evolution of the pointed arch occurs in the frequent early form of vaulting a square compartment with semicircular diagonal groins. As the width of such a compartment is less than its diagonal, which measures the diameter of the semicircle, the transverse arch, being of equal height and not stilted, will necessarily come out as a pointed arch. Hence the transverse arch in so many examples of sexpartite vaulting shows a point, and pointed also by the same consequence are the arches of the clerestory wall or nook moulding.

The like impending alternative of a stilt, threw a reluctant architect upon the pointed arch in exigences where the height of an arch of narrow span was required to range in line with that of one broader, as on Suger's façade of St. Denis, or in the closely-set spacing at turn of an apse in continuation of the wider parallel columns of choir or nave.

Not to forget such a case altogether it must be set down that undoubted instances occur in which the pointed arch is applied constructively from a recognizable appreciation of its special value and function in construction; though of a truth contrary examples, where the round and pointed arch ought in constructive propriety to change places, are quite as abundant. Then the spirit of ornamentation was alert to avail itself, at any moment, of an effective and piquant contrast for no better reason than has suggested to architects of all time the interchange of angular and segmental pediments over windows. It might, indeed, seem to be as recondite a problem how the pointed arch ever could have escaped invention, as how it ever came to be invented. It was a very different matter to recognise the grounds of natural expressiveness in the form, and to set original examples of the most important developments of the noble and prolific germ.

Much of this progress had already been realized, as we have said, in France when Early English—or English Pointed architecture of any kind as yet was not; and the play and variety of the new form had been already largely drawn upon for architectural effects. These are, indeed, inexhaustible in skilful hands—how liable to abuse in unskilful there are examples enough to show, without quitting Mediæval times to draw disparaging comparisons with our contemporary revivalists. Semicircular arches, whether detached or concentric, differ from each other but in scale, not in proportions; and, as we have seen, those which differ in span can only range in height by eleemosynary stilting. The pointed arch has infinite variability of proportion between span and height available either for play or convenience; nay, in systems of subarcuation or suites of mouldings, each successive arch varies in proportion from the next, because the increments or diminutions of breadth and height are of necessity unequal, and thus each internal arch becomes by the easiest of all gradations more and more acute.

It is worth while to give a word or two, even if digressively, to the organic nature of the pointed arch in those forms of which the element is a simple arc of a circle, independently of stilt or of that approximation to the horse-shoe that results when the arcs approach each other more nearly at the base than at some other point intermediate between base and apex. Fortunately for architecture this latter variety of arch has all but escaped the notice of the traffickers in novel and startling ornamentation. Such arches may be defined as arches of which the arcs are struck from a centre above the level of their bases; and another variety is produced when the centre is below that level. These are of much more frequent application and admissible applicability, and for our present purpose follow the same laws of variation as the intermediate and more legitimate class that are struck from centres upon the level of the base,—or, as we had better say,—the springing. All possible varieties of such arcs lie between the point of spring and the apex of the quadrant of a circle. The double quadrant is a semicircle; the double quadrant less any portion by the apex gives a pointed arch, and all possible, any conceivable or optional number of, pointed arches of the class defined, fall into orderly sequence within the limits of the point of springing and the apex of the quadrant. The limb that measures two-thirds of the quadrant from the point of springing is the side of an equilateral spherical triangle, or, as it is phrased, of an equilateral pointed arch. This figure has the merit that commends itself to all moderate geometricians of being the most easy of all others to draw. It is held that the Mediævals attached some special symbolical value to its tri-unity; a point, as far as we are aware, quite destitute of documentary confirmation, though it may be well founded, nevertheless. Practically, the equidistance of points of springing from each other and from apex tells but indistinctly in an open arch, and would infallibly be lost altogether unless taken upon one highly and chiefly conspicuous line of extrados, intrados, or axis of most distinct intermediate moulding. For in a combination of concentric lines the equilateral triangle has but a single opportunity; of every arc without it the interval of points of springing will be in excess of that to the point to the apex; and of every arc within it there will also be inequality, but with the difference the other way.

Apart from the convenience of the designer and indulgence to the idleness of the draughtsman, it may well be doubted whether any real architectural value attaches to this figure. We are very much inclined to think that the true sites of the expressive power of the pointed arch are to be sought elsewhere, and in another manner, than blind grasping at casual coincidence or unreasoning reliance upon mystical analogies that never pretended to be rational. The most promising attempts would probably be made by adjusting total height and span by definite proportion, both in the clear opening and with the inclusive group of mouldings; and then again by making the height of the points of utmost swell proportionate to entire height, and the breadth of interval here proportionate to interval at springing. We are bound to observe and study nature at first hand in art as much as in science; and if we neglect nature to fly to dim, traditional canons, we shall make the same mistake as the Mediævals themselves, who neglected the stars to pick out an astronomy from the system of the false Aristotle or the still falser Areopagite.

The constructive value of the pointed arch only received its due acknowledgment when sexpartite vaulting was given up at once and for ever; in this system there lay the essential incongruity that it was precisely in the arch of widest span, the arch across the diagonal, that the serviceability of the pointed arch for relieving dangerous flatness at the crown was rejected, while it was applied, if at all, to the narrower transverse. In the form of quadripartite vault that took its place, the section either way gave a pointed arch. When this change was made there was revealed more distinctly than ever the natural affinity of the pointed arch to lofty proportions. This was of vital importance when the Compartment was irresistibly extruding the principle of the Story; albeit there may be reason to think that the harmonies of the broadest proportions of which the pointed arch is susceptible have in consequence failed to be worked out, unless in few exceptional cases.

What progress had already been made in France in the new development cannot be better exemplified than in two monuments of Champagne, in the Church of Notre Dame at Châlons, and in the altered Church of St. Remi at Rheims,—a monument of alteration, displaying as much genius as the original construction at Châlons,—both dating nearly at the same time, both as early as A.D. 1157—1183. In both the beauty and the value of the pointed arch are conspicuously declared and displayed; in both the specific verticality of completed Gothic is accentuated and announced; and thus a full melody is completed, upon the theme of which the key-note had been already struck by Suger at St. Denis in A.D. 1144.

Of these remarkable churches there may be more to say hereafter; enough at present that we have full in view the immediate source from whence came in the grand revising, not to say subverting influence, that changed the entire theory of construction and half the decorative aspect of English architecture.

A reservation is made in the last clause, for

there is another aspect of decorative Early English that carries us,—unless we are much mistaken,—in a far different direction. We do not hesitate to connect the lavish employment of decorative Purbeck marble pillarets in England, with the Italian models of which the Cathedral at Pisa was the great, the much-marvelled, example. This great structure was commenced as early as A.D. 1063, and the persistency of the style is shown by its continuation in the baptistery adjacent and the leaning campanile that were not commenced till a century afterwards, in A.D. 1153 and 1174. The Pisan architects had abundance of ancient coloured marbles to their hand, and, indeed, the very shafts and columns they employed were very extensively of antique workmanship. From these contemporary works it is my belief that the English architects derived a passion for the contrast of materials and for multitudinous enrichment by shafts and shaftlets, though they applied the new-found form of ornament to combinations derived elsewhere than from the great Pisan basilica. We are not aware whether this affiliation of style has been suggested before,—it will cause neither mortification nor surprise should it prove so. There are, we believe, some traces in England—in Worcester Cathedral, for instance—of an attempt, after another Italian example, to gain an effect of colour by alternate courses or voussoirs of dark and light stone. The colours here are in moderated contrast and very aptly in harmony, and it is to be regretted that the design was not pursued. For whatever cause,—lack of material or change of architect and difference of taste,—the contrast is first applied but irregularly, and at last given up.

Thus, in our pursuit of the development of styles we have found ourselves carried onward to Italy, and in face of a remarkable Mediæval monument that bears double relation to classic antecedents, on the one hand, and to Gothic derivations on the other. Let us, in conclusion for the time, make this a standing-place, and looking both before and after, glance over the wide field of eventful architectural history.

The Pisan was a finished model of new works just commencing, exactly when new plans were demanded for Canterbury; its tiers of arcades open and in relief, which, we believe, helped the successful competitor to a leading charm in his design, repeat the well-preserved motives of such ancient works as the Coliseum or Septizonium, with the difference of following the late Roman precedents of arches that spring, as at Spalatro or in works of Justinian, not from an entablature, but a capital.

These structures, ancient and modern alike, are systems of stories, are dominated by horizontal division; but there were ancient forms still closely akin, in which verticality asserted itself and attracted its own school of imitators. These are such as the basilica of St. Apollinare, near Ravenna, or that at Treves, where the wall surfaces exhibited a series of loftily-proportioned pilasters, with arches in relief,—a franker and in all ways better expression of the blind discharging arches latent in the substance of the wall of the Pantheon. At Treves a double series of windows are included with no recognition of horizontal line or string-course, between the boldly vertical piers that rise from the ground to the arch that turns just below the cornice. The development of the motives of which these are but isolated examples from a series of unknown variety and numerousness, was most important; it is traceable both in Italy and markedly along the Rhine countries, and the application of it in one country no doubt reinforced and reacted on that of the other. But Roman works were sufficiently abundant in both for it to proceed in each case all but independently, and common accordingly to both Italy and Romanising Germany are the strips of pilasters that clothe external walls, and sometimes in complete and sometimes in periodical series meet the small arches turned below the cornice. Tall reedy shafts more frequently take the place of the pilasters in Italy, but not in Italy alone, as we see by the western apse and towers of the Mediæval churches at Treves (Fergusson, 572), and the parallel line of derivation is equally unmistakeable on the Rhine and on the Po, traceable through many and many a link of connexion. The more daintily designed churches of Novara, Verona, Modena, Parma, Pavia, and Piacenza, must submit in consequence to claim of consinship on the one hand by the lean but largely draughted styles of Spires, Worms, and Mayence, and on the other hand need take no umbrage at alliance with the at once broader and better filled out forms of Bonn and Cologne. After the obliteration of so much monumental evidence, even a correct list of dates of those that remain would not enable us to disentangle the exact line of historical and artistic development; nor is this so important in respect of the secondary connexions; it is of far more interest if we can but seize the general interchange of architectural resources between modern and ancient times, between the heirs and the acquirers of the arts of civilization, and so attain to appreciate the spirit and genius with which they turned them to account.

To recur to our more immediate topic, there is much in the mode of employing Purbeck marble shafts in the English cathedrals that a better judgment rebels against. Sooth to say, apart from the disadvantages of a fallacious material that falls before ordinary damps of condensation in a damp climate,—the colour blends not well with any material it is usually used in conjunction with. Nothing but a liberal use of colour,—of tone, at least,—on the associated surfaces can save it from the intrusiveness of an insult on the poverty of the partnership, and its darkness is a certain disadvantage in a country that has seldom any light to spare. Still we may be grateful to Purbeck marble for having been one of the inducements, if vainly to emulate the variegated pomp of Pisa, at least to develop that variety of clustered shafting to which our best cathedrals owe so much of their general charm, as well as the special and rare enrichment of the nobly-moulded and happily-invented suites of archivolts that answer to them.

ARCHITECTURAL EDUCATION SOME TIME AGO.

A MEDAL bearing the portrait of Mr. T. L. Donaldson has been recently struck, as our readers know, at the instance of some of his professional brethren, to commemorate his services as Professor of Architecture in the University College. On receiving it from the hands of Mr. A. J. Beresford Hope, on the 15th ult., the Professor said, after expressing his thanks:—If I have done somewhat in respect to education, perhaps I may be pardoned if for a few moments I briefly allude to the state of architectural education when I was myself a young man. It is now five-and-fifty years since I entered my father's office as an architectural pupil, and what was the state of our art then? There were no means of education within the reach of the student in connexion with his profession. There was no University College—no Queen's College—to throw open their halls, and give instruction in their schools. My father left me free to follow my own wishes, and I sought to acquaint myself with the literature of our art; but there was no library—as there is now in the room adjoining this—of architectural works: and what were the books which had at that time been published? Pugin was then only beginning his series of Gothic works; Britton was in the midst of the publication of his "Antiquities of England." What were these to a young student? And Carter, admirable as he is as the first to discriminate the styles of Mediæval art, still his work was insufficient to convey the knowledge which the student ought to possess. I wanted to draw; and I felt to conquer the human figure was the only way of getting the mastery of the pencil. I went, therefore, to the classes of Mr. Sass, who was the originator of that school, afterwards so successful in Bloomsbury-street. I had to go up to an attic in a house at the corner of King-street and Holborn, and there I worked from seven till nine in the morning, under the advantages of a good light from the north and a few plaster casts, to get a knowledge of drawing. I afterwards obtained an admission into the Royal Academy, where I studied the antique. But what were the opportunities there? If I had to make a study of an Apollo, or a Venus, or the Laocoon, it was necessary to make the drawing eighteen or twenty inches high. What student's mind could grasp the proportions at such a scale on which to draw the human figure? Those acquainted with the sketches of the great masters know, that they made them about six or eight inches high, and afterwards enlarged their figures from those sketches. But they did not pretend to draw them to a large scale at first. I went through the school of architecture—such as it was. I wished to study mathematics; but there was no professor of that science, and I went first of all to a Scotsman; and he was the means of introducing me to a very remarkable man—a clerk in the Legacy Duty Office, in Somerset House—who was considered particularly skilled in mathematics, but was blind. That man was no other than the son of Robert Burns, the Scottish poet—a most amiable, modest man; and he gave me my first instructions in mathematics. He had such a perfect mastery of figures, that he would in the middle of an equation point out if I committed any error, discovering it at once by mere mental calculation, however complicated the operation. I then wanted to learn water-colour drawing, and for that purpose I went to John Varley. 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ON TIMBER SUITABLE FOR BUILDING PURPOSES.

NORTHERN ARCHITECTURAL ASSOCIATION.

At the annual meeting of this Association, held on the 23rd ult., the president, Mr. J. Green, Newcastle, read an address on timber suitable for building purposes. In the course of it he said,—Without entering into a discussion of the anatomy and physiology of trees, and the properties that will hence result to the timber of each class or natural order, I intend to confine my remarks to topics of a strictly practical character. In the first place, I will offer some remarks on the timber of those trees which have the medullary rays in their composition; after which, proceed to make some remarks upon the timber of those trees in which the medullary rays are absent. The timber of the trees in the first of the classes into which I have divided my subject constitutes that which is generally and popularly known as hard wood, and of which the oak, the ash, the elm, and the European or Spanish chestnut may be considered as the principal types. That in the second of the above referred to classification is the timber of the *coniferæ* or resinous woods; and as examples the Scotch fir, the Tyrolese pine, the white or Weymouth pine, the pitch pine, the Norway spruce, the larch, &c., may be pointed to. It may now be remarked that, in comparing the nature of the timber required for the purposes of domestic architecture under different circumstances—as, for instance, previous to and during the Tudor period, and of that required during the present time—we find a marked and important difference to exist. The resinous wood of the coniferous trees composing the immense pine forests of Northern Germany, Russia, Norway, and Sweden, whilst admirably adapted to the roof trusses and floor joists of the stone and brick buildings of the present day, would be ill-suited to the framed erections of from 300 to 400 years ago. Besides the risk of fire that would have attended the use of fir timber in such edifices, it would have been wholly unfit for the system of carpentry which then prevailed. The use of pins and treenails, as fastenings, would split fir, whilst such fastenings are the best that could be used in the oak carpentry of our ancestors. The reason of such immunity from splitting by such fastenings in the Mediæval system of carpentry alluded to is the binding of the yearly increase by annular additions to the size of the timber by the medullary rays of the hard wood then used, which is wholly wanting in the timber of trees of the pine tribe used in the system of carpentry of the present time. Here, then, by an altered and a much-improved system of house-carpentry at the present day, has opened to us the use of the *Pinus sylvestris*, which, when grown on the strong soils, and in the cool climate of the northern countries of Europe, is by far the strongest, the stiffest, and most durable timber for edifices erected according to the mode of building of the present day, at a most reasonable cost. Although this is decidedly by far the best variety of pine for building timber when grown under favourable circumstances for producing good quality, yet there are many other varieties indigenous to different countries and climates, which, although not so valuable for main timber or carpenter-work, are better adapted for the inside fittings, or the joiner-work of houses. The varieties to which reference is now made are the white or Weymouth pine, and the yellow pine, both from America. The Norway spruce, or *Pinus abies*, from which the white Norway battens are sawn, and also larch, make excellent flooring-boards and tread-boards for stairs. Larch is also excellent for framed-work, such as doors, panelling, and the like; but is too resilient for beams, or for any purpose subject to cross strain, without allowing a much greater scantling than would be necessary for the best fir, or for well-grown and well-seasoned oak. Of domestic-grown timber suitable for house-carpentry the catalogue is certainly a short one. It comprises but three descriptions of hard wood, and perhaps a fourth, if elm be included, and but two of the timber of the coniferæ. The two varieties of oak which are indigenous to Britain are the *Quercus robur* and the *Quercus sessiliflora*. The heartwood of these varieties of the oak, when the tree is well matured, is unquestionably the very best, all properties considered, of any British-grown timber. It is, however, becoming scarce, and timber of good quality of these varieties is so much in demand for shipbuilding as seldom to be available for house-carpentry, except at a very high price. In speaking of these varieties of oak timber for the purpose of house-carpentry, it must be borne in mind, that when the timber is young, it must not be considered better than, if so good as, red fir from the Baltic ports, or from Norway, or from Sweden. The hard-wood timber of home growth next in importance to the oak, is the European or Spanish chestnut, *Castanea*. This timber is as durable as either variety of oak just mentioned, and, in general appearance, it bears a strong resemblance to the *Quercus sessiliflora*, but it is inferior in strength to either variety of British oak spoken of. The last of the British-grown hard woods to be mentioned, although seldom used for the purpose, but which may be found useful under some circumstances in house-carpentry, is elm. It has the property of not splitting, and, when mortised, biting a tenon inserted into it tightly; but it is extremely difficult to work. It, however, makes a better king-head in a composite roof-truss than any other kind of timber, but is inferior for this purpose to cast iron, and can only be recommended for that use when few such members for roofs of a building may be needed. Any other of the British-grown hard woods it is unnecessary to speak of, as all of them, on account of their liability to the attack of insects, rapidly deteriorate in strength, and fall into a state of decay. Of the timber of the coniferæ of domestic growth, the larch and the *Pinus sylvestris* grown in the Scottish islands, are the only kinds suitable for the use of the house-carpenter; the former mentioned for the purposes already spoken of, and the latter mentioned for inferior work in general carpentry. It may here be mentioned, to condemn the practice, as the most egregious folly, of proprietors of estates using home-grown timber, because it happens to be on their estates, in the erection of buildings for agricultural purposes, when the cost of sawing and preparing any such stuffs brings the price of it to much more than Baltic deals, in every respect infinitely superior to any home-grown timber, except such as will always command a much higher price than any ready-sawed foreign timber can be purchased for. Besides oak of British growth, previously treated of, oak is imported from the Continent of Europe and from America. The Turkey oak, *Quercus cerris*; the Holm oak, *Quercus ilex*; wainscot from Riga and Dantzig, and the cork-tree oak from the Mediterranean, are from the former-mentioned part of the world; whilst the American oak, *Quercus alba*, and the Canadian oak, *Quercus rubra*, are American varieties. All these foreign varieties of oak are, however, inferior to English oak in durability. Riga wainscot, imported in quartered logs, with the bark on the outside surface of the quartered tree, and sold by the quantity of 18 ft. cubic measure, is frequently very beautifully mottled, and valued by cabinet-makers for the manufacture of furniture, and by joiners for doors, panelling, window sashes and cases, floors and stairs for the best fitted houses. Mahogany is still more useful for the purposes mentioned than wainscot. Besides the remarks I have just had the honour to submit to the present meeting of our association, I would wish to draw attention to a matter of considerable importance in the use of timber in domestic architecture, and that is the preparation or seasoning of timber, with a view to prevention of its decay. The seasoning of timber is, no doubt, best and most perfectly attained by air drying, that is, in being subjected to a current of atmospheric air in the shade, and protected from rain. This, however, requires great length of time thoroughly to effect, and has led to several expedients to be had recourse to, to obtain the same results in a much less space of time; but although effectual to a great extent for the immediate purpose in view, all the artificial processes to which I allude are accompanied by some objectionable result so as greatly to deteriorate from their merits, and thereby to render them in a greater or less degree failures. I shall now request the further indulgence of your attention to a few brief remarks on the processes of artificial seasoning of timber which have been most frequently adopted with a view to increasing its durability. The first of the means alluded to, rendering timber more durable, to which I will refer, is placing it in a stream of water saturated with lime for eight or ten days. This process has certainly the effect of rendering timber more durable, and less liable to the attack of worms; but it, however, becomes so hard, after being dried, as to be very difficult to be worked; and, therefore, the process should be applied after the timber has been sawn into the scantlings in which it has to be used. This process, it may be remarked, is to be recommended in cases where home-grown timber—particularly fir—is used for building purposes. By the process of creosoting,—that is, of timber after being heated being painted over or steeped in Stockholm tar, oil of tar, or creosote, all of which articles are the same, but in different degrees of purity,—the timber is rendered more durable and less liable to the attack of worms; but by this process it is rendered very inflammable and liable to accident from fire; in addition to which the disagreeable odour from timber so treated renders it objectionable for being used in the building of dwelling-houses. Kyan's process for prevention of decay, which consists in impregnating the timber with corrosive sublimate, renders wood to which it is applied brittle. Timber, when steeped in a strong solution of alum, soda, and in some other solutions of mineral salts, is free from the attack of insects and rendered n a great degree fire-proof; but the process greatly impairs its strength. Whatever may be the direct advantage obtained by the processes of which I have just spoken, when accompanied by some objectionable property or other, they cannot be said to be worthy of adoption in preference to, or to supersede, the air-drying of timber to season it for building purposes, except when the saving of time may be an important object. Before dismissing the present topic, there is an important fact in relation thereto yet remaining to be noticed, and which appears to be but little understood, or, at least, seldom attended to. The fact to which I allude is, that when timber used as posts inserted in the ground is placed in the inverted position to that in which it stood when growing it is very much more durable than if placed in its natural or growing position. This is easily accounted for in the valves of the sap vessels of the growing timber opening upwards; but when that position is inverted, the valves of the sap vessels become reversed in their action; and, therefore, when timber is used as posts inserted in the ground, the valves being so reversed prevent the ascent of moisture from the soil in the wood. A safeguard against the decay of posts, which should never be omitted to be taken, is charring their lower ends to the distance of several inches above the ground in which they are to be inserted. I may also remark that charring the lower end of posts is to be preferred to the use of creosote.

BARNARD CASTLE, DURHAM.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

At the meeting of this Association, on January 24th, Mr. Thomas Wright, M.A., in the chair, a paper on Barnard Castle, Durham, by Mr. T. W. U. Robinson, of Houghton-le-Spring, was read. It contained a concise history of the founders and successive owners of the fortress. Barnard Baliol founded the castle in the first half of the twelfth century, and it shortly became the key to the territory beyond the Tees, on which river it stands. In less than 200 years seven lords of this line succeeded one another, the seventh exceeding all his predecessors in the vastness of his territorial possessions, extending into most counties in England and into Scotland. His wealth brought him the crown of Scotland, and his prosperity induced the enmity of his sovereign, the English king; so that within the 200 years he died destitute, and in exile, in Normandy, in 1314. For a short time, the prince bishop of Durham held the castle after 1296; but the king soon passed it to Guy Beauchamp, Earl of Warwick, and for five descents it remained with that princely family during about 200 years. It then fell to the possession of the Duke of Gloucester, Richard III., and became a royal fee, which it continued to be to the reign of

there is another aspect of decorative Early English that carries us,—unless we are much mistaken,—in a far different direction. We do not hesitate to connect the lavish employment of decorative Purbeck marble pillarets in England, with the Italian models of which the Cathedral at Pisa was the great, the much-marvelled, example. This great structure was commenced as early as A.D. 1063, and the persistency of the style is shown by its continuation in the baptistery adjacent and the leaning campanile that were not commenced till a century afterwards, in A.D. 1153 and 1174. The Pisan architects had abundance of ancient coloured marbles to their hand, and, indeed, the very shafts and columns they employed were very extensively of antique workmanship. From these contemporary works it is my belief that the English architects derived a passion for the contrast of materials and for multitudinous enrichment by shafts and shaftlets, though they applied the new-found form of ornament to combinations derived elsewhere than from the great Pisan basilica. We are not aware whether this affiliation of style has been suggested before,—it will cause neither mortification nor surprise should it prove so. There are, we believe, some traces in England—in Worcester Cathedral, for instance—of an attempt, after another Italian example, to gain an effect of colour by alternate courses or voussoirs of dark and light stone. The colours here are in moderated contrast and very aptly in harmony, and it is to be regretted that the design was not pursued. For whatever cause, —lack of material or change of architect and difference of taste,—the contrast is first applied but irregularly, and at last given up.

Thus, in our pursuit of the development of styles we have found ourselves carried onward to Italy, and in face of a remarkable Mediæval monument that bears double relation to classic antecedents, on the one hand, and to Gothic derivations on the other. Let us, in conclusion for the time, make this a standing-place, and looking both before and after, glance over the wide field of eventful architectural history.

The Pisan was a finished model of new works just commencing, exactly when new plans were demanded for Canterbury; its tiers of arcades open and in relief, which, we believe, helped the successful competitor to a leading charm in his design, repeat the well-preserved motives of such ancient works as the Coliseum or Septizonium, with the difference of following the late Roman precedents of arches that spring, as at Spalatro or in works of Justinian, not from an entablature, but a capital.

These structures, ancient and modern alike, are systems of stories, are dominated by horizontal division; but there were ancient forms still closely akin, in which verticality asserted itself and attracted its own school of imitators. These are such as the basilica of St. Apollinare, near Ravenna, or that at Treves, where the wall surfaces exhibited a series of loftily-proportioned pilasters, with arches in relief,—a franker and in all ways better expression of the blind discharging arches latent in the substance of the wall of the Pantheon. At Treves a double series of windows are included with no recognition of horizontal line or string-course, between the boldly vertical piers that rise from the ground to the arch that turns just below the cornice. The development of the motives of which these are but isolated examples from a series of unknown variety and numerousness, was most important; it is traceable both in Italy and markedly along the Rhine countries, and the application of it in one country no doubt reinforced and reacted on that of the other. But Roman works were sufficiently abundant in both for it to proceed in each case all but independently, and common accordingly to both Italy and Romanising Germany are the strips of pilasters that clothe external walls, and sometimes in complete and sometimes in periodical series meet the small arches turned below the cornice. Tall reedy shafts more frequently take the place of the pilasters in Italy, but not in Italy alone, as we see by the western apse and towers of the Mediæval churches at Treves (Fergusson, 572), and the parallel line of derivation is equally unmistakeable on the Rhine and on the Po, traceable through many and many a link of connexion. The more daintily designed churches of Novara, Verona, Modena, Parma, Pavia, and Piacenza, must submit in consequence to claim of consinship on the one hand by the lean but largely draughted styles of Spires, Worms, and Mayence, and on the other hand need take no umbrage at alliance with the at once broader and better filled out forms of Bonn and Cologne. After the obliteration of so much monumental evidence, even a correct list of dates of those that remain would not enable us to disentangle the exact line of historical and artistic development; nor is this so important in respect of the secondary connexions; it is of far more interest if we can but seize the general interchange of architectural resources between modern and ancient times, between the heirs and the acquirers of the arts of civilization, and so attain to appreciate the spirit and genius with which they turned them to account.

To recur to our more immediate topic, there is much in the mode of employing Purbeck marble shafts in the English cathedrals that a better judgment rebels against. Sooth to say, apart from the disadvantages of a fallacious material that falls before ordinary damps of condensation in a damp climate,—the colour blends not well with any material it is usually used in conjunction with. Nothing but a liberal use of colour,—of tone, at least,—on the associated surfaces can save it from the intrusiveness of an insult on the poverty of the partnership, and its darkness is a certain disadvantage in a country that has seldom any light to spare. Still we may be grateful to Purbeck marble for having been one of the inducements, if vainly to emulate the variegated pomp of Pisa, at least to develop that variety of clustered shafting to which our best cathedrals owe so much of their general charm, as well as the special and rare enrichment of the nobly-moulded and happily-invented suites of archivolts that answer to them.

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At the annual meeting of this Association, held on the 23rd ult., the president, Mr. J. Green, Newcastle, read an address on timber suitable for building purposes. In the course of it he said,—Without entering into a discussion of the anatomy and physiology of trees, and the properties that will hence result to the timber of each class or natural order, I intend to confine my remarks to topics of a strictly practical character. In the first place, I will offer some remarks on the timber of those trees which have the medullary rays in their composition; after which, proceed to make some remarks upon the timber of those trees in which the medullary rays are absent. The timber of the trees in the first of the classes into which I have divided my subject constitutes that which is generally and popularly known as hard wood, and of which the oak, the ash, the elm, and the European or Spanish chestnut may be considered as the principal types. That in the second of the above referred to classification is the timber of the *coniferæ* or resinous woods; and as examples the Scotch fir, the Tyrolese pine, the white or Weymouth pine, the pitch pine, the Norway spruce, the larch, &c., may be pointed to. It may now be remarked that, in comparing the nature of the timber required for the purposes of domestic architecture under different circumstances—as, for instance, previous to and during the Tudor period, and of that required during the present time—we find a marked and important difference to exist. The resinous wood of the coniferous trees composing the immense pine forests of Northern Germany, Russia, Norway, and Sweden, whilst admirably adapted to the roof trusses and floor joists of the stone and brick buildings of the present day, would be ill-suited to the framed erections of from 300 to 400 years ago. Besides the risk of fire that would have attended the use of fir timber in such edifices, it would have been wholly unfit for the system of carpentry which then prevailed. The use of pins and treenails, as fastenings, would split fir, whilst such fastenings are the best that could be used in the oak carpentry of our ancestors. The reason of such immunity from splitting by such fastenings in the Mediæval system of carpentry alluded to is the binding of the yearly increase by annular additions to the size of the timber by the medullary rays of the hard wood then used, which is wholly wanting in the timber of trees of the pine tribe used in the system of carpentry of the present time. Here, then, by an altered and a much-improved system of house-carpentry at the present day, has opened to us the use of the *Pinus sylvestris*, which, when grown on the strong soils, and in the cool climate of the northern countries of Europe, is by far the strongest, the stiffest, and most durable timber for edifices erected according to the mode of building of the present day, at a most reasonable cost. Although this is decidedly by far the best variety of pine for building timber when grown under favourable circumstances for producing good quality, yet there are many other varieties indigenous to different countries and climates, which, although not so valuable for main timber or carpenter-work, are better adapted for the inside fittings, or the joiner-work of houses. The varieties to which reference is now made are the white or Weymouth pine, and the yellow pine, both from America. The Norway spruce, or *Pinus abies*, from which the white Norway battens are sawn, and also larch, make excellent flooring-boards and tread-boards for stairs. Larch is also excellent for framed-work, such as doors, panelling, and the like; but is too resilient for beams, or for any purpose subject to cross strain, without allowing a much greater scantling than would be necessary for the best fir, or for well-grown and well-seasoned oak. Of domestic-grown timber suitable for house-carpentry the catalogue is certainly a short one. It comprises but three descriptions of hard wood, and perhaps a fourth, if elm be included, and but two of the timber of the coniferæ. The two varieties of oak which are indigenous to Britain are the *Quercus robur* and the *Quercus sessiliflora*. The heartwood of these varieties of the oak, when the tree is well matured, is unquestionably the very best, all properties considered, of any British-grown timber. It is, however, becoming scarce, and timber of good quality of these varieties is so much in demand for shipbuilding as seldom to be available for house-carpentry, except at a very high price. In speaking of these varieties of oak timber for the purpose of house-carpentry, it must be borne in mind, that when the timber is young, it must not be considered better than, if so good as, red fir from the Baltic ports, or from Norway, or from Sweden. The hard-wood timber of home growth next in importance to the oak, is the European or Spanish chestnut, *Castanea*. This timber is as durable as either variety of oak just mentioned, and, in general appearance, it bears a strong resemblance to the *Quercus sessiliflora*, but it is inferior in strength to either variety of British oak spoken of. The last of the British-grown hard woods to be mentioned, although seldom used for the purpose, but which may be found useful under some circumstances in house-carpentry, is elm. It has the property of not splitting, and, when mortised, biting a tenon inserted into it tightly; but it is extremely difficult to work. It, however, makes a better king-head in a composite roof-truss than any other kind of timber, but is inferior for this purpose to cast iron, and can only be recommended for that use when few such members for roofs of a building may be needed. Any other of the British-grown hard woods it is unnecessary to speak of, as all of them, on account of their liability to the attack of insects, rapidly deteriorate in strength, and fall into a state of decay. Of the timber of the coniferæ of domestic growth, the larch and the *Pinus sylvestris* grown in the Scottish islands, are the only kinds suitable for the use of the house-carpenter; the former mentioned for the purposes already spoken of, and the latter mentioned for inferior work in general carpentry. It may here be mentioned, to condemn the practice, as the most egregious folly, of proprietors of estates using home-grown timber, because it happens to be on their estates, in the erection of buildings for agricultural purposes, when the cost of sawing and preparing any such stuffs brings the price of it to much more than Baltic deals, in every respect infinitely superior to any home-grown timber, except such as will always command a much higher price than any ready-sawed foreign timber can be purchased for. Besides oak of British growth, previously treated of, oak is imported from the Continent of Europe and from America. The Turkey oak, *Quercus cerris*; the Holm oak, *Quercus ilex*; wainscot from Riga and Dantzig, and the cork-tree oak from the Mediterranean, are from the former-mentioned part of the world; whilst the American oak, *Quercus alba*, and the Canadian oak, *Quercus rubra*, are American varieties. All these foreign varieties of oak are, however, inferior to English oak in durability. Riga wainscot, imported in quartered logs, with the bark on the outside surface of the quartered tree, and sold by the quantity of 18 ft. cubic measure, is frequently very beautifully mottled, and valued by cabinet-makers for the manufacture of furniture, and by joiners for doors, panelling, window sashes and cases, floors and stairs for the best fitted houses. Mahogany is still more useful for the purposes mentioned than wainscot. Besides the remarks I have just had the honour to submit to the present meeting of our association, I would wish to draw attention to a matter of considerable importance in the use of timber in domestic architecture, and that is the preparation or seasoning of timber, with a view to prevention of its decay. The seasoning of timber is, no doubt, best and most perfectly attained by air drying, that is, in being subjected to a current of atmospheric air in the shade, and protected from rain. This, however, requires great length of time thoroughly to effect, and has led to several expedients to be had recourse to, to obtain the same results in a much less space of time; but although effectual to a great extent for the immediate purpose in view, all the artificial processes to which I allude are accompanied by some objectionable result so as greatly to deteriorate from their merits, and thereby to render them in a greater or less degree failures. I shall now request the further indulgence of your attention to a few brief remarks on the processes of artificial seasoning of timber which have been most frequently adopted with a view to increasing its durability. The first of the means alluded to, rendering timber more durable, to which I will refer, is placing it in a stream of water saturated with lime for eight or ten days. This process has certainly the effect of rendering timber more durable, and less liable to the attack of worms; but it, however, becomes so hard, after being dried, as to be very difficult to be worked; and, therefore, the process should be applied after the timber has been sawn into the scantlings in which it has to be used. This process, it may be remarked, is to be recommended in cases where home-grown timber—particularly fir—is used for building purposes. By the process of creosoting,—that is, of timber after being heated being painted over or steeped in Stockholm tar, oil of tar, or creosote, all of which articles are the same, but in different degrees of purity,—the timber is rendered more durable and less liable to the attack of worms; but by this process it is rendered very inflammable and liable to accident from fire; in addition to which the disagreeable odour from timber so treated renders it objectionable for being used in the building of dwelling-houses. Kyan's process for prevention of decay, which consists in impregnating the timber with corrosive sublimate, renders wood to which it is applied brittle. Timber, when steeped in a strong solution of alum, soda, and in some other solutions of mineral salts, is free from the attack of insects and rendered n a great degree fire-proof; but the process greatly impairs its strength. Whatever may be the direct advantage obtained by the processes of which I have just spoken, when accompanied by some objectionable property or other, they cannot be said to be worthy of adoption in preference to, or to supersede, the air-drying of timber to season it for building purposes, except when the saving of time may be an important object. Before dismissing the present topic, there is an important fact in relation thereto yet remaining to be noticed, and which appears to be but little understood, or, at least, seldom attended to. The fact to which I allude is, that when timber used as posts inserted in the ground is placed in the inverted position to that in which it stood when growing it is very much more durable than if placed in its natural or growing position. This is easily accounted for in the valves of the sap vessels of the growing timber opening upwards; but when that position is inverted, the valves of the sap vessels become reversed in their action; and, therefore, when timber is used as posts inserted in the ground, the valves being so reversed prevent the ascent of moisture from the soil in the wood. A safeguard against the decay of posts, which should never be omitted to be taken, is charring their lower ends to the distance of several inches above the ground in which they are to be inserted. I may also remark that charring the lower end of posts is to be preferred to the use of creosote.

BARNARD CASTLE, DURHAM.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

At the meeting of this Association, on January 24th, Mr. Thomas Wright, M.A., in the chair, a paper on Barnard Castle, Durham, by Mr. T. W. U. Robinson, of Houghton-le-Spring, was read. It contained a concise history of the founders and successive owners of the fortress. Barnard Baliol founded the castle in the first half of the twelfth century, and it shortly became the key to the territory beyond the Tees, on which river it stands. In less than 200 years seven lords of this line succeeded one another, the seventh exceeding all his predecessors in the vastness of his territorial possessions, extending into most counties in England and into Scotland. His wealth brought him the crown of Scotland, and his prosperity induced the enmity of his sovereign, the English king; so that within the 200 years he died destitute, and in exile, in Normandy, in 1314. For a short time, the prince bishop of Durham held the castle after 1296; but the king soon passed it to Guy Beauchamp, Earl of Warwick, and for five descents it remained with that princely family during about 200 years. It then fell to the possession of the Duke of Gloucester, Richard III., and became a royal fee, which it continued to be to the reign of

Charles I., who granted it to Sir Henry Vane, of Raby, with whose descendant, the Duke of Cleveland, it continues. The chief interest of the place is now to be found in the great historic names with which it is associated. The ruins contain but a very small part of the work of the Baliols, and are more remarkable for the picturesque beauty of their situation than for their architectural attractions. A fine Norman gateway and massive circular tower, the latter attributed to Bishop Bek, of Durham, during his short tenure at the end of the thirteenth century, are, however, well worth attention.

ECCLESIASTICAL ART IN IRELAND.

There are at present in the workshops of Messrs. Early & Powell, in Camden-street, Dublin, some painted glass windows, intended for the chapel of the Convent of Mercy at Parsonstown, of which we hear good things. The colouring, says our correspondent, is brilliant; the treatment of the sacred subjects artistic and expressive. The expense is to be defrayed by the amount of a legacy left for the decoration of the chapel of the Convent of Mercy at Birr by the late Mr. Joseph Burke, of Elm Hall, in the neighbourhood of Parsonstown, and of Fitzwilliam-place, Dublin. These windows include representations of the Holy Virgin, St. Joseph, and St. John the Baptist.

SANITARY MATTERS.

Llanelly.—The fevers that abound here now and have been raging for the last twelve months, having caused considerable alarm to the inhabitants generally, they, through the Board of Health, memorialised the Home Office to send a medical man to inspect the town. The result was that the Government authorities sent Dr. Hunter, who visited the worst neighbourhoods and the principal parts of the town, where fever has been most fatal. Dr. Hunter gave it as his opinion that the town was in a most unhealthy state, and required immediate attention and cleansing. The drainage, he urged, ought to be completed thoroughly; and what is done of it ought to be well ventilated.

Hulme.—At the last meeting of the Chorlton Board of Guardians, a letter was read from the medical officers for the Hulme district, asking for an augmentation of salary, on the ground that their duties had been largely added to by the enormous increase of sickness among the poor—the cases requiring medical attendance having doubled since the year 1859; and they believed that this increase was likely to be permanent; for, owing to the gradual absorption of dwellings for the erection of warehouses in Manchester, great numbers of small houses of the worst class in point of ventilation and drainage were springing up in the outskirts; and the defective sanitary condition of these dwellings would be likely to add to rather than diminish the prevalence of disease. The letter was referred to the out-relief committee.

Newcastle and Gateshead.—In addition to their ordinary duties, the Gateshead guardians are still required to discuss mortality tables and devise measures calculated to improve the health of the Union. At their last meeting, it was stated that fever was so prevalent that proper hospital accommodation for the patients could not be had. It was resolved, therefore, to secure a building and adapt it for the purpose required; and a committee was appointed to take the required steps for carrying out the object.

PARIS.

The works of the Halles Centrales are pushed forward with all the vigour necessary for a work of such importance, covering, as it will when completed, 40,000 square mètres (9a. 3r. 21½p.), without counting the land occupied by the service or the boundary roads, specially reserved for commerce and circulation. Commenced in 1854, the eastern block was terminated in 1857. Of the six pavilions which constitute the western body of the building, similar to those of the eastern, two are actually finished, and every preparation has been made for the site of another pavilion in a line with the great central street of the Halles. Our readers are aware that the Halle aux Blés, or Corn Market, constitutes, in the definitive plan of the Halles Centrales, the head of the group of buildings. This edifice, preceded by two buildings for offices, will be far from spoiling the general aspect of the Halles. Commenced in 1763, on the site of the ancient Hôtel des Soissons, the Hall aux Blés, of a circular form, was completed in 1772, from the designs and under the superintendence of Le Camus de Mezières. It has twenty-eight arcades on the ground-floor, and as many windows in the upper story, which is gained by two staircases, placed at equal distances, and of a very remarkable construction. Each story is covered with stone and brick vaulting. The cupola, as it at present exists, was raised in 1812, from the designs of M. Brunet, architect. Constructed with rafters of cast-iron, covered with copper sheating, it replaced the ancient timber one destroyed by fire in 1802.

The three great principal doors of the Eglise Saint Augustin, in the Boulevard Malesherbes, have been just placed on their hinges. They have been executed in galvanoplastic copper, by M. Christofle, from the designs of M. Baltard, architect to the church. The figures occupying the upper portion of the two lateral doorways represent little angels carrying the insignia of the Passion. At the upper portion of the central door are placed the four cardinal virtues—Justice, Force, Prudence, and Temperance. These are by M. Mathurin Moreau. The lower portion of this door is decorated with shells and reeds, the emblems of baptism, and vine-branches with ears of corn, the emblems of the Communion. Above the cardinal virtues, and let into the stone, are three medallions, painted on enamelled lava, by M. Paul Balze, representing the theological virtues, Faith, Hope, and Charity. At the interior, above the three great arcades giving access to the porch, projecting brackets support the apocalyptic symbols of the Evangelists,—the angel of St. Matthew, the eagle of St. John, the lion of St. Mark, and the ox of St. Luke. These are the work of M. Jacquemart. A first row of niches, adorned with colonnettes, contains the statues of the great prophets; in front, Moses and Elias, by M. Cavelier; on the left, Jeremiah, by M. Chambard; Isaiah, by M. Farochon: on the right, Daniel, by M. Chardigny; Ezekiel, by M. Gruyère. A frieze, representing Christ and the Twelve Apostles, forms the principal feature of the façade. Two other friezes on the lateral faces represent the patrons of the edifice, Christian fathers and doctors,—St. Leon le Grand, by M. Farochon; St. Augustin, between St. Monique and St. Ambroise, bas relief, by M. Bonnassieux; St. Gregory the Great, by M. Chambard. On the façade, in the niches at each side, and on a level with the bas relief, St. Augustin, St. Thomas d'Aquinas, by M. Cavelier; St. Chrysostom, by M. Despretz. In the great central arcade, on each side of the rose window, are two angels, under palm-trees, holding the Old and New Testaments, by M. Lepère. The cross, on the summit of the pediment, crowns all; it is accompanied by two angels carrying the chalice and crown of thorns, by M. Schroder. The church is expected to be opened for service at the end of the year 1866.

Among the number of churches in construction in Paris, that of Saint-Ambroise-Popincourt, although commenced after those of Montpamasse and Montrouge, seems to be most rapidly progressing, the walling being completed, and the iron rafters for the roof in place.

Constructed under the superintendence and from the plans of M. Balu, this church will yield nothing either in grandeur of aspect or decorative richness to those of La Trinité and Saint Augustin. The principal façade, looking upon the Boulevard Prince-Eugène, will be preceded by a porch of grand open arches flanked by two towers 60 mètres high (196 ft. 10¼ in.), which is the only masonry work that remains to be executed for this edifice. At the first story these towers will be decorated with an arching surmounted by a rosace containing a work of art; the second story will be equally adorned, but with an arching of larger dimensions; while at the summit, where the spire commences, the angles will be enriched by elegant campaniles, which will harmonise, by their chaste outline, with the general *ensemble* of the edifice. On the principal façade, as well as on the gables of the transepts, at the height of the clerestory, will be opened grand rosaces of the richest coloured painted glass. A stone gallery or triforium will be carried round the entire building. This church, conceived in the semicircular style of architecture, will have three vaulted naves, and a transept; its greatest length will be 287 ft., and width 118 ft. 1¼ in. The Rue St. Ambroise and another projected street, will isolate laterally this church, the grand entrance being preceded by a "place" at the edge of the Boulevard Prince Eugène.

The old church of St. Ambroise, to be demolished as soon as the new one is ready for service, dates from the year 1659.

On December 26th, the new Tribunal of Commerce of Paris, of which we have given illustrations and description (see *Builder*, No. 1,187, November 4, 1865), was inaugurated with great ceremony. The Emperor and Empress were present, and on their arrival were received at foot of the grand staircase by the Minister of Agriculture, Commerce, and Public Works. Their majesties were conducted over the building, and addressed warm felicitations to M. Bailly, the architect of the structure, for the good taste displayed both in the arrangements of the interior, and the internal and external ornamentation.

During the past year the following have been the receipts of theatres, &c., of Paris, liable to the tax for the indigent:—January, 84,956*l.* 14s.; February, 82,610*l.* 13s.; March, 76,474*l.* 6s.; April, 66,030*l.*; May, 65,245*l.* 17s.; June, 46,622*l.* 15s.; July, 39,188*l.* 8s.; August, 49,384*l.* 12s.; September, 49,941*l.* 15s.; October, 64,085*l.* 16s.; November, 66,553*l.*; December, 75,641*l.* 12s.; total, 766,736*l.* 7s. for 1865. The receipts for 1864 amounted to 669,959*l.* 1s., leaving a balance in favour of 1865 of 96,777*l.* 6s.

EAST GREENWICH.

Some time since a site for a Wesleyan church and schools, at Creed-place, adjoining Greenwich park, was acquired by trustees, and plans were prepared from their instructions by Mr. Hoole, of Craven-street, London, for the erection of a complete educational and religious establishment. This was to include a church, schools for boys, girls, and infants, a parsonage, and a house for the master.

The first instalment of this extensive scheme has just been completed by the erection of one of the large school-rooms. This will shortly be opened for service, and will be used as a temporary chapel until the funds are forthcoming for proceeding with the remainder of the work.

The internal dimensions of the school are 48 ft. by 30 ft. It is entered by a porch. The materials used in its construction are stock bricks, with Bath stone dressings, with relieving arches of red Suffolks and yellow malms over the doors and windows. Internally the walls are of picked stocks, relieved with white and red Suffolks. The roof is an open one, and is boarded, fitted, and slated with blue and green countess slates, surmounted with Staffordshire ridge tiles. Bath stone corbels carry the roof principals, which are stained and varnished. Lancet lights, in pairs, light the sides of the school, and three lancets the front. Over these is a circular window, 3 ft. in diameter. A similar window is formed in the opposite gable; and these two, being made to open, secure the means of ample ventilation.

The gas-lighting is effected by a single row of burners along each side of the building, at about the level of the wall-plate.

Macfarlane's sanitary cast-iron appliances are added in the rear of the school.

The works have been carried out by Messrs. Kitson & Sons, of East Greenwich, for 600*l.* An additional sum of 50*l.* had to be expended on extra depth of foundations, which, owing to the unsound nature of the ground, had to be carried in some places as deep as 14 ft. below the surface. A bell-cot has been added to the building by a special contribution.

THE LATE MR. DAVID BELLHOUSE, OF MANCHESTER.

Mr. David Bellhouse, who died on the 19th ultimo, at the residence of one of his sons at Sale, in Cheshire, at the ripe old age of 74, long held the position of acknowledged head of the building trades in Manchester. He commenced life under the auspices of his father, Mr. David Bellhouse, one of the most eminent timber merchants of his time in that part of England, as a joiner, builder, and contractor on a large scale. He was highly successful, and his name

is connected there with nearly all the great public edifices and works of his time. But his great judgment, skill, and intelligence, soon made him known beyond the limits of his business as a constructor. He was one of the first of the race of civil engineers, and was continually consulted about the stability of works of construction, long before the railways created, as it were, a new profession. As a witness in "compensation cases," so remarkable was his skill, intelligence, shrewdness, and knowledge of the value and capabilities of land in the district, that his testimony was considered to be almost indispensable on one side or the other, and his "retainers" were very numerous. The writer of an appreciative notice of Mr. Bellhouse in the local *Courier* speaks of one of these compensation cases, tried in the large room of the York Hotel, King-street, in which the late Serjt. Wilkins was opposed by the late Mr. Justice Cresswell, and in which the evidence was going rather strongly against the serjeant's client. "Mr. Richard Lane, the architect, Mr. Thomas Lee, also an architect and surveyor, and our late friend," he says, "had all given evidence which threatened to be very destructive to the serjeant with the jury. Finding himself in this difficulty, the serjeant, with the humour for which he was remarkable, waxed poetical to the jury. 'I am in this predicament, gentlemen,' said he, 'the old rhyme, which you know, meets me full in the face—"Pass the Lane, and over the Lee, and then you come to the Bellhouse;" and I candidly admit that the Bellhouse, with all his wonderful shrewdness and knowledge, is by far the most formidable difficulty I have to "pass."' It was a well-deserved compliment bestowed in the jocular vein." As a genial and excellent member of society Mr. Bellhouse was greatly regarded; and in connexion with music and musical professors he will be long remembered in Manchester. We may add that he was one of the two original partners in the well-known engineering firm of Edward T. Bellhouse and Company, of Eagle Foundry, Manchester.

THE ARCHITECTURAL MUSEUM.

IT has been arranged, we understand, that the casts forming the Architectural Museum shall be removed from South Kensington and made to take shape as a separate institution. The committee are seeking for a building near to Charing Cross, if possible, where they may be set up for the convenience of art-workmen and others willing to study. If we are ever to have, as we should have, a National Museum of Architecture, Government must lend its aid in earnest, and afford such a space as will admit of a complete development.

EDINBURGH ORIGINAL SECESSION CHURCH.

THE original Seceders are a small body who still adhere to the principles of the solemn league and covenant, and they retain as their motto that which figured on the banners of the Covenanters,—"For Christ, His Church, and Covenant." The congregation, which is a poor one, have for some time past used the Temperance Hall, Nicholson-street, as their place of worship; but they have now, by earnest and energetic action, raised sufficient means to build a church for themselves. The site of the new church is the westernmost corner of Victoria-terrace. This terrace is formed somewhat in the same manner as the Rows at Chester. Victoria-street takes a sudden dip from Melbourne-place to the Grassmarket, and the terrace is formed over the shops, giving a level footway to the Castle-hill. At either end the buildings are made to project over the footway, forming an arcade. The front wall of the church rests on five massive square piers, carrying round-headed arches, according to the original design of the terrace, and the architects (Messrs. Paterson & Shiells) have adopted the Lombardic style in the superstructure, as most in unison therewith. Above the cornice of the arcade the church is lighted by two rows of windows, having moulded imposts and archivolts; and each window is divided into two lights, by shafts, with moulded caps and bases, finished at top by pointed and cusped arches, and a pierced circle near the apex of the arch. In the centre of the south elevation a gable rises to the height of the ridge, which is flanked on either side by smaller gables. On the east and west sides gables rise to the level of the ridge. All the gables are ornamented with crocketed skews and stone finials, and the three main ones are pierced by cinquefoil openings for ventilation. The ground-floor, within the arcade, contains a room which may be used for congregational purposes, but which is intended to be let as a wareroom in the mean time. The church floor is 15 ft. above the level of the terrace, and extends over the arcade. The entrance is at the south-east angle, through a hall and staircase at the rear. The interior is almost square in plan, and is treated in a plain and unpretentious manner. A gallery runs along the north side, and the pulpit occupies the centre of the south side. It is seated for 400, and cost about 1,600*l*. The site presented considerable constructive difficulties.

PERMANENT SUN-PRINTING IN OIL COLOURS AND PRINTER'S INK.

THE ingenious process of Mr. John Pouncy, of Dorchester, whereby the sun is made to print photographs, from ordinary negatives, upon paper prepared with sensitized printer's ink, has already been more than once favourably noticed in the *Builder*. Mr. Pouncy is still making advances on his original idea of the carbon process, for the attainment of the great desideratum of truly permanent photographs. He now prints, by his printer's ink and oil colour processes, on ceramic ware, the photographs being thus burnt in upon the ware; and is also experimenting on wood for decorative panels, as well as for engraving blocks. The pictures are transferred either to wood, for panels, &c., or to lithographic stone, for ordinary lithographic printing, by simple means; and really the effects, especially in the form of lithographs, are excellent, though not so fine, of course, as his photographs themselves, which will admit of even microscopic examination. The transfers to wood may be said to be still in an immatured state; but they promise well, whether for decorative panels or for the engraver. For panels (as for ceramic ware also, we presume), the photographs may be taken in his sensitized oil colours (green, blue, red, &c.) as well as in ordinary printer's ink sensitized. In sun-printing with these colours turpentine is the sole developer of the picture, after the sensitized ink or oil colour has been fixed by the sun-light upon the tissue paper on which it is spread. Mr. Pouncy supplies this paper, post free, at the rate of something like 1s. a sheet, or less in wholesale quantities; so that, on one condition, that the picture shall bear his penny-license label, any photographer may use his paper, and so produce truly permanent photographs. A practical photographer says that this is cheaper than he can prepare sensitized paper in the usual way. The public, however, we suspect, must create the demand, by insisting on having permanent photographs by Pouncy's method. We would strongly recommend the Manchester Corporation to give this process a trial in their projected photographic museum. A specimen of Mr. Pouncy's sun-printing in printers' ink may be seen at the *Builder* office.

EDWARD SMYTH, THE IRISH SCULPTOR.

A READER says "he would be much obliged to the editor of the *Builder* if he or his correspondent 'C. H. C.' (in the number for January 13th, 1866) would name any work in which a full account of the Irish sculptor, Edward Smyth, can be found; the only notice the writer has hitherto seen being the brief one in Walsh's 'Dublin;' from which it would appear that he was of good family, but threw away his social advantages. The writer wishes to know, among other things, if *Edw.* Smyth,—or, as some one has stated, a *John* Smyth, *designed* the monument of Archbishop Smyth, in St. Patrick's Cathedral, which was executed by Van Nost. In 'C. H. C.'s' interesting article, where the names of Flaxman and Smyth are brought together, it does not seem quite clear which of the two is intended in the expression, 'The artist, at least, has done his work well.' The writer is inclined to suppose that Smyth, the sculptor, belonged to some branch of the family of which the archbishop and three other bishops were members."

Our correspondent "C. H. C." having read this note, writes:—

In reply to the inquiries of your correspondent respecting some account of the life and works of Edward Smyth, I feel a pleasure in directing him as far as I remember at present.

He will find in one of the early volumes of the *Citizen*, a Dublin monthly magazine, published between the years of 1839-42, a very graphic and sympathetic account of Smyth, his career, and ill-requited services. The sketch was written by one, I believe, who knew him.

Scattered, also, through the four volumes of the *Dublin Penny Journal*, 1832-6, and the *Irish Penny Journal*, 1840-1, will be found some slight notices of the sculptor and his works, in the description of public buildings in these publications.

If I recollect right, there is some mention of Smyth, or John Smyth, the son of the former, in the account of St. Patrick's Cathedral, in "Bell's Gothic Architecture of Ireland."

I am unable to say positively at present who designed the archbishop's monument alluded to; but certain I am there is much which has been executed by the Smyth family in Dublin, and throughout Ireland and England, unchronicled.

The only contact I know of between Edward Smyth and Van Nost was in the competition for the statue of the celebrated Dr. Lucas, at present in the Royal Exchange, Dublin; when Smyth carried the palm by his superior model, and executed the work.

In the article on Dublin, where the expression is used, "The artist at least has done his work well," Smyth is meant.

To the above sources of information pointed out, I may add that in the "Life of James Gandon," the architect, written by the late T. Mulvany, and published twenty years since in Dublin, some notices of Edward Smyth, in conjunction with the works of his friend and patron, will also be found.

The whole of the Smyth family,—the father, son, and grandsons,—were remarkable for their genius and misfortunes; and the ill luck that appeared to hover around the grandfather has followed the footsteps and culminated with his grandchildren.

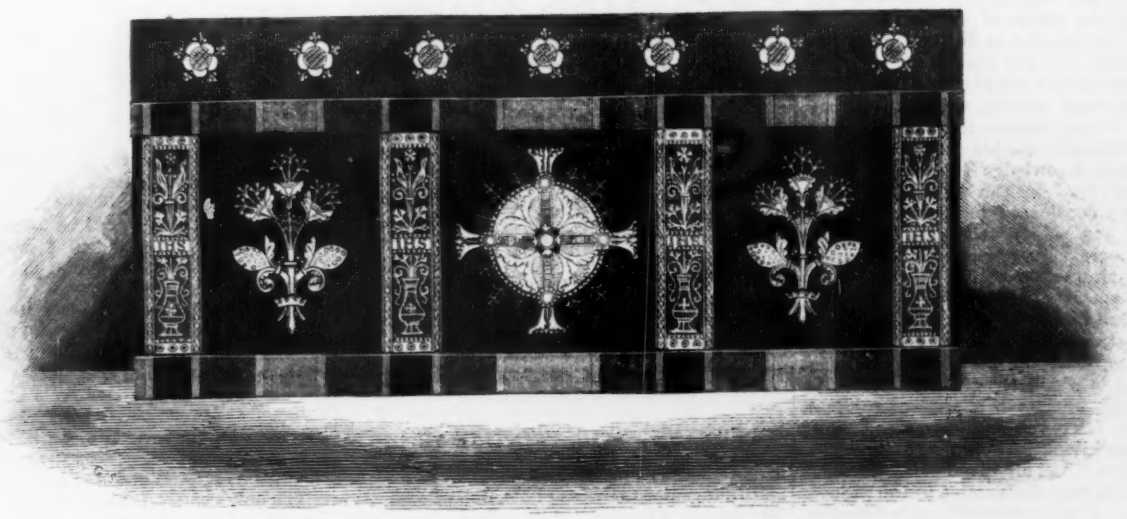
Of the latter, the brothers Michael, James, and George were clever, unpretentious, but ill-fated. The last-named is, I believe, still alive in Dublin, and doubtless could furnish information anent the family, its history, and the profession it founded, elevated, and represented for many years in Ireland.

C. H. C.

DWELLINGS FOR THE POOR.

DELEGATES from various boards of guardians within the metropolitan district have held a meeting at the offices of the Strand Union, in Bow-street, Covent Garden, to consider what steps they should take with reference to this urgent public question. The chair was taken by Mr. Wilkinson. Mr. Storr remarked that the committee appointed by the Strand Union Board felt no difficulty in coming to the conclusion that the existing house and lodging accommodation for the labouring and poorer classes within their district is inadequate; that great overcrowding prevails; that disease and immorality are thereby fostered; that rents are high; and that it is impossible to tell where the 3,082 poor persons, whose houses would be removed to make room for the new law courts, will be driven to when the time arrives for them to seek other abodes. It would be a good thing in itself to remove this property, which was old and in bad repair, and in which constantly there were outbreaks of fever; but that was only half the question. The other half, hitherto unanswered, was, where are these people to go? "Supply and demand" was a very good thing in its way, and as far as it went; but it was no consolation to these poor people, on turning them out, to say that all things found their level by laws well understood by political economists, the upper classes, and railway companies. Other gentlemen expressed their opinions, and a draft memorial was read by Mr. Kilner, the clerk, which was ordered to be printed, and copies sent to every board of guardians within the metropolitan district. At the next sitting the memorial will be discussed, as well as the necessity for petitions being presented to both Houses of Parliament.

DRAINAGE OF MIDHURST.—This town is now undergoing a thorough course of drainage. The works have been commenced in North-street.



. ALTAR CLOTH, RADCLIFFE INFIRMARY CHAPEL.

THE GIBBONS CARVINGS AT PETWORTH.

THE bad state to which time and neglect have brought many of our fine eighteenth-century carvings being just now recognised, we would express a hope that the elaborate works by Grinling Gibbons and his more modern successor Ritson, at Petworth, will receive immediate attention. When we last saw these wonderful carvings, the washed-out-and-dried appearance which they presented struck us forcibly, and a certain powdery surface in parts suggested the possible presence of the insidious worm. We may be mistaken. Careful examination may show, as would we hope be the case, that they are sound at heart; but this examination should most certainly be made at once by a competent person.

We understand that the carved pendants from the Cedar Chapel at Chatsworth, which are about to be repaired and set right, will be placed in the Library of the Royal Institution in Albemarle-street this (Friday) evening, when Lord Stanhope is to lecture.

WASHABLE FRONTS.

A CORRESPONDENT writes:—"Among all the contrivances for making our very dirty metropolis look a little cleaner, I do not know whether it has ever occurred to anybody that the houses might be faced with glazed bricks, which would wash. Every year costly buildings are erected faced with various-coloured bricks. In two or three years these buildings look more wretchedly abject and dirty than if no attempt at all had been made at colour. Bricks might be made, glazed on one side only, just as cheap jars and crocks are partially or entirely glazed. If houses were faced with these, any colours might be used, and the houses might be washed once or twice a year, according as the inhabitants wished."

Such bricks have been and are made, as readers of the *Builder* know; but the cost and other circumstances seem to stand in the way of their use. Moreover, unless arranged with taste and skill, the result, as with encaustic tiles, is not satisfactory.

MID-LONDON RAILWAY.

THE Metropolitan line, although eccentric, and ranging from Paddington, N.W., to Finsbury Pavement, has wondrously alleviated the pressure of carriage traffic on the great thoroughfares of Holborn and the New-road; and, since its opening, the suburbs of the north-west have been further packed with houses and swollen by a population, making the metropolis continuous for six miles in that direction. The wondrous and unexpected success of the Underground line has, therefore, shown the way of facilitating locomotion, and of saving the wholesale demolition of old settled districts.

Were it not for the easement afforded by the Metropolitan line, Oxford-street, Holborn, the New and City Roads, would be now as crowded and stagnant as Fleet-street and the Poultry.

In addition to the grand arterial thoroughfare along the new river embankment, there are now several railway projects which have complied with the Standing Orders, and are before the Standing Committee of the House; amongst them is the *Mid-London Railway*, which is proposed to start from near the Kensington Station of the West London line; to be continued thence in a direction as nearly straight as may be to the London, Chatham, and Dover concentric station at Farringdon-street; measuring 5¼ miles in length, exclusive of connecting branches, and providing stations at suitable distances for all the principal points throughout its course, near the great intersecting thoroughfares; first at Addison-road, then at Bayswater-road, near the old Toll-bar, at or near Park-lane, at Regent's Circus, Oxford-street, at High-street, Holborn, and at or near the corner of Chancery-lane,—the distances being severally about half a mile apart.

This line will open out thoroughfares 60 ft. wide at least, first at Tenterden-street, Hanover-square; then from Soho-square to High-street, which it is proposed to widen; and so continue by the new route through Lincoln's-Inn-Fields, at present barred out by turnstiles, and thence by the corner of Chancery-lane to Middle-row, Holborn, where co-operation will be given by the Board of Works to abate that foul blot on London's finest street: thus, the course runs nearly straight in a parallel with Oxford-street and Holborn.

Throughout its whole course the line will be covered, or underground,—in some places tunnelled, but improved much as to the system of ventilation, and lighted from above at stations and wherever the superficies will admit of shafts; the average depth below the surface being about 20 feet.

The expense is estimated at 2,500,000*l.*, but it is urged the cost of construction will be much reduced by the right appropriation for valuable ranges of business houses, in those parts where the line of deviation includes old and comparatively valueless premises.

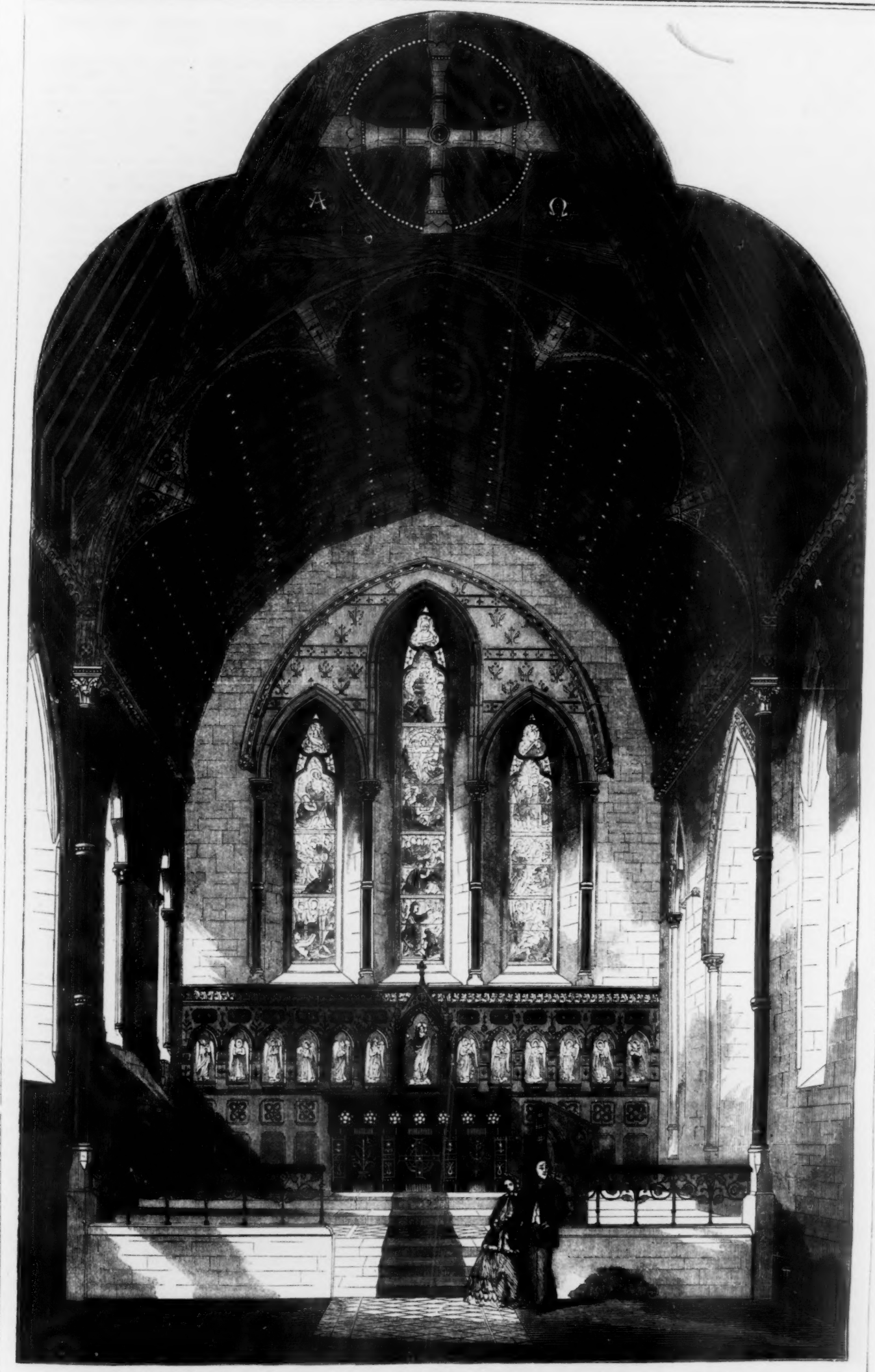
Taking, as the Mid-London does, the grand central route, there will be little interference with valuable property, and none with public structures.

If an outlying metropolitan line pays so enormously, it is fair to assume that one leading directly through the centre, offering the shortest communication between the heart of commerce and its outlying limbs, can scarcely fail to succeed in a pecuniary point of view, while at the same time it offers to the whole community the advantage of time saved, with economy, certitude, and safety. Some proximate notion of value assured to the public in time saved may be deduced from the fact that three-quarters of an hour will be gained in a single journey, and, therefore, an hour and a half from a return, on the whole distance, and so in proportion for short stages. Supposing, then, that 100,000 passengers used the trains daily, we should get 150,000 hours thus saved.

CHAPEL, RADCLIFFE INFIRMARY, OXFORD.

THIS chapel was built at the sole expense of Mr. Thomas Combe, M.A., of the Clarendon Press, and presented by him as an offering to the Radcliffe Infirmary, Oxford. A room in the centre of the building (of course unconsecrated) had previously been used as a chapel. The present building, which will accommodate about 100 worshippers, is connected by a covered corridor with the north wing of the main building. This, as well as the chapel itself, is warmed with hot water. The building is a simple parallelogram in plan, of 62 ft. by 20 ft. internal measurement, with a small recess on the south side for an organ and vestry. The seats, unlike a college chapel, all face eastward, and there is a raised chancel (seen in the view) one-third the total length of the building. The material used is Gibraltar stone, in horizontal courses, with Bath stone dressings. The chancel is lined with Bath stone, and the upper portion of the rest of the walls above the window-sills, internally, is finished without plaster. The reredos consists of a wooden frame, decorated with colour and gilding, containing in the centre a figure of our Lord, and on each side figures of angels playing on musical instruments. All these figures are painted on poplar panels, on burnished gold grounds, and were copied at Florence, from works of Fra Angelico, by a resident artist, Sr. Martelloni, expressly for the chapel. The east window and the altar-cloth were presented by Mr. Combe. The former is by Messrs. Heaton, Butler, & Bayne, who also executed the coloured decoration of the roof and reredos. The altar-cloth, designed by the architect, and of which we give a separate engraving, is manufactured of embroidered velvet, worked with coloured silks and gold threads, and set with fine large crystals. The frontal is of green velvet, and divided into three compartments, by four embroidered and floriated orphreys; to these portions have been applied some elaborate specimens of the modern embroidress's art. The superfrontal is composed of crimson silk velvet. This altar-cloth has been well executed by Messrs. Frank Smith & Co., of Southampton-street, Strand. The works were carried out by Mr. Joseph Castle, of Cowley-road, Oxford. Mr. Blomfield was the architect.

The chapel was consecrated by the Bishop of Oxford, on the 7th of June last, and has since been used by the inmates.



RADCLIFFE INFIRMARY CHAPEL, OXFORD.—MR. ARTHUR W. BLOMFIELD, ARCHITECT.

UNSIGHTLY SCREENS BETWEEN GARDENS.

IN the Court of Common Pleas, in the case of Noel *v.* Paddle, the action was brought to recover damages against the defendant for having erected on the plaintiff's wall a hoarding of "a dirty colour," which offended his eye and trespassed on his party-wall. It appeared that the plaintiff and defendant are next door neighbours in Ockendon-road, Islington, and the complaint was that a hoarding or screen had been built up by the defendant against a low wall separating the respective gardens of the houses Nos. 54 and 56, so as to practically raise it about 3½ ft. The boards were fastened to the wall on the defendant's side by 6-in. staples. Before any witnesses were called for the defence, Mr. Justice Byles suggested some terms, which, in a modified form, were, after some discussion, agreed to. The hoarding is to be taken down, and the wall raised at the joint expense of the plaintiff and the defendant. A juror was withdrawn, and each party will pay his own costs.

THE ARCHITECTURAL ASSOCIATION.

THE ordinary meeting of members was held on Friday evening (the 19th ult.), at the House in Conduit-street.

The chair was occupied by the president, Mr. R. W. Edis.

Messrs. E. Northcote, 20, Guilford-street, Russell-square; Mr. Vialls, St. Giles's-square, Northampton; and Mr. E. S. Harris, were elected members of the Association.

Mr. J. D. Mathews (hon. secretary) read a letter from Dean Stanley on behalf of the Westminster Chapter-house restoration committee, requesting that the object which the committee had in contemplation might be brought under the notice of the Association, with the view of obtaining its co-operation at the deputation which the Chancellor of the Exchequer had consented to receive after the Christmas holidays. The committee also invited the president to join their number.

The Chairman observed that the letter of Dean Stanley referred to a subject in which he was sure they must all, as architects, feel an interest. The restoration of the Chapter-house at Westminster had been taken up by a body of gentlemen well known for archæological and antiquarian research, and included the names of Earl Stanhope, Mr. Beresford Hope, M.P., Mr. Tite, M.P., and many others equally well known. He begged to suggest a resolution to the effect that the Association had learned with pleasure that steps were about to be taken to restore the Chapter-house, and that the Association would be glad to give all the assistance in its power towards a work of such national importance and interest.

A resolution similar in substance to that suggested having been agreed to,

The Chairman said he had to announce with pleasure that since their last meeting one of their members, Mr. J. Lemon, had been appointed surveyor for the Borough of Southampton, having been selected from between fifty and sixty candidates for the office. He hoped that although Mr. Lemon might no longer be an active member of their body, he would still be able to visit them occasionally, and that he would also endeavour to make the Association known in the neighbourhood which would be the future scene of his operations. There was another subject which he considered it was his duty to bring under the notice of the meeting, and he regretted to say that it was of a melancholy nature: he referred to the sudden death of their registrar, Mr. Moody, who had succumbed to a painful disease.

Mr. R. P. Pullan then read a paper on "Christian Architecture in the East." He observed that the Church of St. Sophia at Constantinople, or the great Mosque of St. Sophia, was the finest interior of any church in the world, both as regards space and ornamentation. In the Dromic churches of the East, there were galleries for the accommodation of women, the religion of Orientals not allowing the two sexes to worship in common. The presence of these galleries distinguished the Dromic churches of the East from the basilicas of the West. The only ancient church in the East which appeared to him to be uninjured by the process of restoration was that at Bethlehem. It was remarkable, however, for the absence of the women's gallery. The effect of the interior had been spoiled by the erection of a cross wall to divide the Greeks from the Latins, both of whom laid claim to the church. The interior decorations included some fine mosaics. A similar mode of decoration was extremely effective at the Church of Salonica, the dome of which was covered with them, although Time and the Turks, the latter more destructive by far, were fast abolishing them. At the time when he visited the latter church, a little urchin threw stones at the ceiling of the dome, in order to bring down portions of the mosaic for him to carry away as trophies. He regretted his inability to thrash the juvenile iconoclast; but the experiment would have been a dangerous one, as he happened to be the son of the chief priest. Having traced the history of Christian architecture from the time of Constantine to that of Justinian, Mr. Pullan described the little mosque of St. Sophia at Thessalonica, built in the reign of the latter monarch. This church at one time was endowed with peculiar sanctity, as it contained the body of St. Nicholas, from which exuded holy oil, which was believed to have curative properties of extraordinary value. When, however, the church fell into the hands of the Normans (who regarded the Greeks as heretics), the holy oil was used to grease boots and fry fish, which desecration occasioned frightful scandal to the true believers. Of thirteenth century architecture there were numerous examples at Jerusalem, Cyprus, Rhodes, and other places, the whole of which appeared to have been originally designed by French architects. The Cathedral of St. Mark, at Venice, built in the form of a Greek cross, was the purest Byzantine church in the West. Why, he asked, could we not have a Dromic church in England; or why, at least, might we not profit something from the Byzantine period of art?

Mr. H. Dunphy, in moving a vote of thanks to Mr. Pullan, observed that he feared Byzantine architecture would not be appropriate to our climate. In the clear transparent atmosphere of the East, where shade was most desirable and where a little light went a long way, a Byzantine church was most suitable; but with an English climate, and especially a London fog, he did not believe it would be accepted as suitable. So far as floor space was concerned, the class of building advocated by Mr. Pullan was very desirable, no matter what might be the style of architecture; but in England, as a general rule, congregations appeared desirous to worship by stealth, as they did all in their power to conceal themselves in hideous pews that resembled horse-boxes more than anything else. A revolution of feeling in this respect would be necessary before churches with a spacious area for worship would become popular.

A member observed that he considered the Byzantine style gloomy, morose, and not adapted to the ritual of Protestant worship. It was, consequently, inapplicable as the groundwork of a new style.

Mr. L. W. Ridge would prefer to see modern architects endeavour to strike out a style of their own rather than fall back upon adaptations of thirteenth century art, or that of any other epoch of the past.

In reply to a question,

Mr. Pullan described the manner in which the mosque of St. Sophia, at Constantinople, and the Church of St. Mark, at Venice, were lighted. The windows were filled with fine stained-glass in small pieces, fitted into very heavy stone mullions. He had never found a round window similar to that recently restored in the basilica of the Temple Church in any of the Eastern churches which he had visited. With regard to the measurement, &c. a little bakshish judiciously administered to the church-keeper would enable the visitor to take any measurements or make any notes he pleased.

In answer to further questions, Mr. Pullan stated, that although within a day's journey of the recent extraordinary discoveries of early ecclesiological art in Syria, he had not visited the spot, as he had been informed that there was nothing to see but some Byzantine ruins similar to many others that had previously come under his observation. He wished it to be understood that he did not advocate a Byzantine church in England, but that his contention was merely that the principle of Byzantine architecture might be usefully applied in the construction of large churches.

After some further dicussion, the chairman, in putting the vote of thanks to Mr. Pullan, observed upon the valuable nature of the information which he had collected, and expressed his opinion that the architect who had travelled most would, in the end, be found to be the best designer. The impression brought to his own mind by the contemplation of a Byzantine building, was that of great solemnity and grandeur, although, so far as the dome was concerned, he did not think that the Pagan was the best example for Christian art.

A member observed, that the dome was probably suggested by the form which the firmament presented to the human eye. He saw no reason why the dome should be characterized as Pagan, because it came from Rome originally. The Parthenon was domed, but Rome was the centre of the Christian world.

The vote of thanks to Mr. Pullan having been agreed to,

Mr. L. W. Ridge brought under notice the advertisement of the trustees of St. Mary's, Islington, for plans for the erection of a new workhouse, and their offer of 2½ per cent. to the superintending architect. He moved that the honorary secretary be requested to transmit to the trustees a copy of the rules of the Architectural Alliance, with special reference to the schedule of architects' charges, as sanctioned by the Royal Institute of British Architects.

After a short discussion, in which the chairman and other members expressed an opinion that it would be better not to take any notice either of the trustees or of their offer, the resolution was put from the chair, and on a division, carried by 17 to 15.

The Chairman announced that the subject for the next class of design would be, "A wooden belfry and spire and summit of tower;" and that on the 2nd of next month, Mr. Lemon would read a paper "On the prospect of improved dwellings in London."

ST. NICOLAS COLLEGE, LANCING, SUSSEX.

DURING the last few years very large and important works have been carried into execution, both at the college at Lancing, and also at its schools at Hurstpierpoint and Ardingly. It may be remembered that the object in founding the college was to provide a sound education in the spirit of the English Church, for the sons of the middle classes. The principal school is at Lancing, and is for the upper middle class, such as Harrow or Winchester; the second school is at Hurstpierpoint, and is for the sons of wealthy tradesmen, farmers, &c.; and the third school at Ardingly, is for 1,000 boys of the lower middle class, where they are boarded and educated at 14*l.* 14s. per annum.

The college at Lancing will, when completed, accommodate not less than 300 boys. The buildings were first commenced in 1855, and from that time they have been in course of erection. The two wings of the lower quadrangle were complete in 1857, together with the headmaster's house and crypt of the long hall. The library was next taken in hand, together with the upper school-room. These two buildings form the connecting block between the wings of the quadrangle; they are each 30 ft. in width. They are lighted by a series of two-light windows in gables, divided by buttresses with canopied niches, the cloister being continued underneath on the ground-floor, and opening into the yard by richly moulded and cusped arches. The roofs of both buildings are boarded and panelled to the cant of the rafters. In the west wall is a series of arches, which will open into the reading-rooms and class-rooms. The block of buildings extending in a line southwards from the library, beyond the south wing, was then completed. There are in it four stories, containing rooms for the visitor, the Bishop of Chichester, chaplain's and masters' rooms, dormitories, &c. This brought the works up to the middle of 1864, when a contract was entered into with Mr. Bushby, for the completion of the dining-hall. This building is 101 ft. long, below which is a breakfast-room of the same length. The hall is lighted by richly-moulded two-light windows separated by massive buttresses about every 10 ft. apart. The end wall is ornamented by bands of stonework above. The roof is supported by lofty moulded arched principals, and will have on the east side five, and on the west four, dormer windows of stone, with rich buttresses; and in the centre will rise a lofty lantern of oak, covered with lead, with a shingle spire. The contract with Mr. Bushby is now given up, and the roof is being erected by workmen employed by the college, under the direc-

tion of their architects. The works in contemplation for this year are the grand staircase and approach to the hall, ante-hall, gallery, &c. The grand staircase and lobby will be groined, the arches being supported on clustered columns of marble; and the gallery will open into the hall, by three lofty arches resting on granite clustered shafts. The oak panelling of the hall will also be proceeded with. Besides these works, the south wing of the upper quadrangle will be commenced, which will consist of two floors of dormitories with an open cloister of two stories, with richly-moulded arches. The material used at the college is flint with dressings of Caen stone, and the style of the whole is that of the latter end of the thirteenth century. The works have been carried out, for the most part, by Mr. Bushby, of Littlehampton, under the architects of the college, Messrs. Slater & Carpenter; Mr. Knight being the resident clerk of works.

At. St. John's school, Hurstpierpoint, the new chapel has been completed, and which was more fully described in a previous number. The new head master's house will be commenced in the spring, with additional dormitories.

At St. Saviour's schools, at Ardingly, the first portion of the new buildings will be completed in carcass at the end of the present month. They consist of a block, having on the ground floor a cloister, class-rooms, master's rooms, common room, &c. and on the first and second floors, two domitories, side by side, each for fifty-two boys (204 in all); there are also here master's and prefect's rooms. This building will form the west side of the great lower quadrangle, and the works to be undertaken this year will complete half of the north side. These works are the building of the dining-halls, for 800 boys; they will be in two stories, for 400 each. The material for these and the block already built, is red brick, with dressings of sandstone and Caen stone; the style is Early Pointed. The builder employed is Mr. Cave, of Brighton, under the architects of the college, and their clerk of works.

A STEEPLE JACK AT WESTMINSTER.

A DARING individual, named Burns, from Manchester, has succeeded at the House of Parliament in the dangerous operation of fixing four copper bands round two of the finials on the centre tower. The last November gale blew off one of the finials, and loosened another; and if it had not been for the lightning conductor, one would have dropped down, and might have done considerable damage, being one of the highest, and 9 in. square by 6 ft. 5 in. from its basement to top, surmounted by a vane that would not revolve. From that cause the wind had such power over it that the third joint gave way, and the finial fell against the steeple; the west wind, however, moved it again, and placed it in its position, where it rocked. Burns made his way, 210 ft. high, outside the tower, without scaffold, by a series of seven ladders, in an ingenious manner, and safely repaired it. Burns very recently got up to the top of the steeple of St. Mary's Church, Rotherhithe; succeeded in taking down the weather-vane, which is 7 ft. 4 in. long, and 84 lb. weight; and after it had been repaired and regilded, he restored it to its place.

THE NEW COLLEGE FOR HULL.

THE foundation stone of a new college for Hull has been laid by the Earl de Grey and Ripon, who is to be the president of the institution, and who delivered an able speech on the occasion, on the subject of middle-class education. The college will be called the Hull and West Riding college, and is situated in close proximity to the large collegiate school in the Elm Tree-avenue. The building is in the Gothic style of the thirteenth century. The architect is Mr. R. G. Smith, who is also architect to the corporation, and was the architect for the New Theatre Royal in Hull. The frontage in Park-street measures about 130 ft. The depth of the building will be 117 ft., and the greatest height 70 ft. It will be of red brick with Harehill stone facings. The great hall (already considerably advanced) will be 60 ft. by 40 ft. In front of this hall there will be a portico, formed of red Mansfield columns, over which is the large window of five lights. The hall is flanked by flying buttresses rising above the roof at the east front, and terminating in pinnacles. That part of the building yet to be erected comprises the portico just mentioned and the class-rooms, masters' rooms, porter's residence, &c. Of the class-rooms there are to be eight, two masters' private rooms having separate entrances from the front, the porter's residence, lavatories, and other conveniences. Over the porter's residence and the door by which the pupils will enter the college, will rise a bell turret. At the back there will be an extensive playground, and the whole building will be enclosed with iron palisading. The contract for carrying out the work was taken by Mr. Charles Hutchinson, of Hull, and the estimated cost of the whole building was 3,000*l*.

WHERE ARE THERE ANY LONDON ANTIQUITIES?

SIR,—There would seem to be two sorts of people, in this present latter half of the nineteenth century, devoting themselves to *art—art capitalists* and *art workmen*; those who reap all the benefit and vanity to be got now-a-days out of art and architecture, and engineering, and those who *do* all the work. That the art capitalist has his rights no one will dispute; but there are, I suspect, not a few who will deny that the draughtsman and workman and student have theirs as well. I must contend that they have *rights*. Sir, your uniform practice now for so long a series of years, in allowing every struggling cause to have its say, will, I feel certain, *pass* the few words, out of many, which I cannot forbear.

The first art-right, in my opinion, which every art student, whether workman or draughtsman, has a claim to, is the unasked-for permission to see and study in their integrity the works of those who have gone before them, and who have left records of their personal and individual power over the materials out of which fine art is formed and shows itself. Without this they are as men without a past. Instead of following on with ever-increasing strength the work that has gone before them, they must perforce begin anew each one for himself. Every successive generation of art-workmen has to begin a new art-life, and from a fresh starting-point, without guidance and without element of *comparison* and consequent help.

Our London antiquities, if we now had any, would be to the Gothic art-student of the present all this. By the side of these actual remains of what our ancestors in art-workmanship have left us all books, drawings and copies are as nothing—little better than lumber; for the actual impression of the hand-writing of each dead artist is, or, rather, was, on them. Have our present race of art-capitalists any *right* to either scrape this off, to paint over it, to blot it, or to withhold it from our sight? I say they have not. No—not even for vanity's sake, nor at the bidding of a society. It is the student's *right*.

But where are there any London antiquities to look at, whether with or without leave? Where are the remains of the London of the Middle Ages? Where is Gothic London? Everybody who reads this knows well that but very little indeed remains; nothing, in fact, but a church here and there, and Westminster Abbey and its Chapter-house. All else is utterly gone, and nothing but the remembrance in the drawings of old Hollar left. These few churches actually, and wonderful to say, yet remain, *i.e.* the skeletons of them, the dry dead bones: for so thoroughly have they one and all been, or are being, scraped, painted, and blotted with "art-*manufacture*," that, as MS. records in stone, they are gone or going utterly! *One single solitary bit only now remains, the Westminster Chapter-house*;—saved, miraculously saved—see the Dean's address—by the very influences, years ago, which were meant for its destruction. Nobody owned the Chapter-house: to the Abbey Prebends it was and is useless; the Record Office kindly took to it, hid the writing on its walls with deal packing-cases, and so saved at least a part of it to this present hour. It is the sole and only record of Gothic London now existing—our only antiquity. Has anybody, therefore, a right to "*restore*" it, *i.e.* to blot it with the nothingness of *art-manufacture*, or to shut it up from our sight till that dire event comes about? But, sir, it *is* shut. Is this fair? Ought it to be thus? Before we talk about our antiquities, must we not *see* them? It is comforting to think that the leading journal is a little interested, that it condescends a moment from its political economy and allows some one to ask "Where are our antiquities?" Let us hope that it will aid in preserving from the clutches of the manufacturer of "stained glass" and "*polychromy*" this sole remnant of our antiquities; and that it will, before it urges the "restoration" of the Chapter-house, go and look at it, and study the restored bits of the Abbey and its "lantern," and grieve over its newness and destroyed antiquity.

If Mr. Scott can be induced for but a few hours to go to the Temple Church, and lament over its mutilated Gothic carcass,—the round part only will do,—with its glass, paint, tiles, mended effigies, fragments like the Greek marbles of a great bygone time and ways, each effigy covering *over* the very ashes of him whom it represented, and its brass work,—I feel sure that he will stay his hand, or, rather his orders, and will forbear, and will *not* "restore" the Chapter-house, or, as the Latin has it, "furbish up" the little that remains of it, or blot it with manufactured glass. I am thoroughly confident of this; for a way there is to do this work of reverential preservation, but what that precise way is who can tell, till we see the writing on the ruins of it? Will Mr. Scott open again for a few short days the deal doors of this monument, and burn the empty boxes which hide the walls and floor; then look at it,—for he has not yet seen it himself,—and keep in view the manufactured Temple work? Then, and then only, will he see that the way *not to do it* is to follow the very elaborate drawings which he exhibited, and which were so much admired by his friends.

C. BRUCE ALLEN.

P.S.—If there be any difficulty about moving away the boxes and lumber, why not shift part and let us see *half* the building?

THE TRADES MOVEMENT.

Sheffield.—The dispute between the file manufacturers and the grinders appears to be approaching an unpleasant phase. A meeting of the manufacturers has been held, to consider the advance of wages demanded by the men. About thirty firms, including the most important in the file trade, were represented. Mr. S. Butcher presided. He referred to the keenness of the competition which exists in the American trade, and said that by this movement the file-grinders were seeking to do what the native American manufacturers also had at heart, namely, to prohibit the importation of English-made files into the United States. There was but a very small margin of profit at present, and if the manufacturers were to concede the advance asked for, they would be compelled to close their trade in this branch with America. A long discussion ensued, in the course of which it was stated that the advance asked for would be equivalent to 33½ per cent., and not merely 25 per cent. as had been previously stated. The meeting unanimously resolved not to grant it. The forgers and cutters are said to disapprove of the conduct of the grinders.

Edinburgh.—There has been a meeting of the house-painters of Edinburgh, to consider the propriety of a union, with the view of obtaining a reduction of their hours of labour to nine hours per day. A resolution to that effect was unanimously agreed to.

Wolverhampton.—The local branch of the Amalgamated Society of Carpenters and Joiners have just celebrated their first anniversary. The chairman congratulated the meeting (about fifty in number), on the progress they had made in twelve months, and trusted the year they had now commenced would prove equally prosperous. The secretary said the Society was founded in London, in 1860, at the end of which year it had twenty branches, 618 members, and 321*l*. in funds. In December, 1865, it had 134 branches, 5,777 members, and funds amounting to 6,868*l*. 6s. The objects of the Society were to secure for its members, by legal and honourable means, the full value for their labour; and such reduction of the hours of labour as could be agreed on between masters and men; and provision for sickness, old age, &c. The Secretary of the General Union of Carpenters and Joiners, in responding to a toast, said that the time having arrived for giving notice on the part of the men of any alteration they desired in the rules, notice had been sent in for the increase of wages asked for last year, and which the men

believed still to be their due. They had also given notice for the Saturday half-holiday. They did not obtain that concession last year, in consequence of the difference among the delegates themselves. This year the demand was modified to the effect that all wages should be paid not later than one o'clock on Saturday, so that if a man preferred work to relaxation after that he could do so, but he for one wanted the relaxation.

Paris.—The operative paperstainers in Paris have struck work for shorter hours. The men demanded that their day's work should be reduced from 11 to 10 hours from the 1st of January. The masters require a postponement until September next, the period when new patterns of stained paper are adopted, and when all the arrangements are made for the ensuing year.

IRON MOULDERS' WAGES IN MANCHESTER.

DURING the last few weeks the journeymen moulders of Manchester and Salford have made a demand, at a very short notice, for a general advance of wages of 2s. per week. The weekly wages given to iron moulders in Manchester and Salford have been 34s. and upwards, which are stated to be more than the rate obtained by any other class of operatives connected with the engineering trades in the same locality, and the present demand is for 2s. advance for every moulder employed, whether he receives 34s., 36s., or 38s.

This is looked upon by the employers as an attempt to initiate a general rise of wages in all branches, as a similar advance can hardly be refused to engineers, millwrights, smiths, turners, patternmakers, &c., after it has been granted to the moulders. Most of the foundries in Manchester have ceased casting for the present, and others are partially worked by moulders at the old rates. The masters have had several meetings; and it is intended, we are informed, that a Defence Association be formed, unless the present demand be withdrawn.

PRIZES FOR ART-WORKMANSHIP.

SOCIETY OF ARTS.

THE following is a list of the prizes awarded:—

Works executed from Prescribed Designs.

CARVING IN MARBLE, STONE, OR WOOD.

The Human Figure.—Work executed in marble or stone, after the "Boy and Dolphin" cast from a chimneypiece, ascribed to Donatello.—Three works sent in.—First prize not awarded. Two second prizes of 7*l.* 10s. each,—one to Alexander Keunure, 43, Pancras-square, N.W.; and one to R. Wallace Martin, 5, Olney-street, Walworth, S.

Ornament.—Work executed in marble, stone, or wood after a carved chair-back in the South Kensington Museum.—Two works sent in.—First prize not awarded. Second prize of 5*l.* to John Dayman, jun., 4, Edward-street, Vauxhall Bridge-road, S.; and extra prize of 2*l.* 10s. to James Stuart, 7, Pancras-square, N.W.

REPOUSSÉ WORK IN ANY METAL.

Ornament.—Work executed after a tazza in the South Kensington Museum.—One work sent in.—First prize of 5*l.* to S. Beresford, 29, Myddelton-street, E.C., and 3*l.* extra.

HAMMERED WORK IN IRON, BRASS, OR COPPER.

Ornament.—Work executed after a portion of the Pediment of a Gate (German work, date about 1700) in the South Kensington Museum.—Three works sent in.—First Prize of 7*l.* 10s. to W. Letheren, Lansdown Iron Works, Cheltenham; and second prize of 5*l.* to T. Winstanley, No. 7, Stanhope-street, Newcastle-street, Strand, W.C.

CARVING IN IVORY.

Human Figure in the round.—Work executed after a miniature statuette (Italian), No. 304 in the South Kensington Museum.—Two works sent in.—First and second prizes not awarded. A prize of 5*l.* to John Bentley, 22, Sherwood-street, Golden-square, W.

CHASING IN BRONZE.

Ornament.—Work executed after Goutier, from a cabinet in the possession of her Majesty the Queen.—Four works sent in.—First prize not awarded. Two second prizes of 7*l.* 10s. each awarded, one to G. R. Meek, 26, Harrison-street, Gray's-inn-road, W.C.; and one to H. J. Hatfield, 16, Alfred-street, Tottenham-court-road, W.C.

ETCHING AND ENGRAVING ON METAL.—NIELLO WORK.

Ornament.—Work executed after arabesques by Lucas Van Leyden, 1528.—One work sent in. First prize not awarded. Second prize of 5*l.* to G. S. Berry, 4, King-street, Regent-street, W.

ENAMEL PAINTING ON COPPER OR GOLD.

The Human Figure.—After Raffaelle's design of the "Three Graces," executed in *grisaille*.—Two works sent in.—First prize not awarded. Second prize of 5*l.* to W. J. W. Nunn, 10, Gardham-street, Bromehead-street, Commercial-road, E. Extra prize of 3*l.* to E. Autran, 4, Nassau-street, Soho-square, W.

Ornament.—Executed after a German arabesque (sixteenth century).—One work sent in.—First prize of 5*l.* to Frederick Lowe, 13, Wilderness-row, E.C.

PAINTING ON PORCELAIN.

Ornament.—Executed after arabesques by Lucas Van Leyden, 1528.—One work sent in.—First prize of 5*l.* to Alexander Fisher, 5, Clyde-street, Stoke-upon-Trent.

DECORATIVE PAINTING.

After an *ornament*, from Castel R. Pandino, near Lodi, from a drawing in South Kensington Museum.—Three works sent in.—First prize not awarded. Two second prizes of 3*l.* each awarded, one to John Henk, George-street, Stoke-upon-Trent; and one to Thomas Longmore, Hardinge-street, Fenton, Staffordshire.

INLAYS IN WOOD (MARQUETRY OR BUHL), IVORY, OR METAL.

Ornament.—Executed after a specimen in the possession of the Hon. John Ashley.—One work sent in (metal).—First prize of 5*l.* to T. R. Rice, 18, Suffolk-street, Essex-road, N.

DIE SINKING.

Human Head.—After the head of the Prince Consort, by Wyon, on the Society's medal.—Three works sent in.—First prize not awarded. Second prize of 5*l.* to A. Bouchette, 12, Percival-street, E.C.

BOOKBINDING AND LEATHER WORK.

Bookbinding.—After an Italian specimen in the South Kensington Museum.—Three works sent in.—First prize of 7*l.* 10s. to John Jeffrey, 61, Charlotte-street, Portland-place, W.

ILLUMINATIONS.

Ornament.—After an altar card, attributed to Giulio Clovio, in the South Kensington Museum, No. 2,958, or a MS. border, date 1150, No. 3,057, in the South Kensington Museum.—Three works sent in.—First prize not awarded. Second prize of 3*l.* to W. W. Burgess, 21, Market-street, Curzon-street, W.

Works executed without Prescribed Designs.

WOOD CARVING.

Human figure in alto or bas-relief; animals or natural foliage may be used as accessories.—Seven works sent in.—No first or second prizes awarded. Third prize of 10*l.* to J. Meiklejohn, 58, Sussex-street, Pimlico, S.W., for a carving, "The Introduction of Music to the Arcadians." An extra prize of 7*l.* 10s. to G. F. Bridge, 3, Vincent-square, Westminster, S.W., for a carving, "Purity;" also one of 5*l.* to Henry Jones, 9, Bedford-street, Seymour-street, Euston-square, N.W., for a panel, in oak, with figure of "Wisdom;" and one of 3*l.* to G. Rumford, 19, Eccleston-street East, S.W., for a carving, "Puck."

Animal or still life. Fruit, flowers, or natural foliage may be used as accessories.—One work sent in.—First and second prizes not awarded. Third prize of 5*l.* to John Neaves, 26, William-street, Regent's Park, N.W., for a carving, "Eagle and Prey."

Natural foliage, fruit, or flowers, or conventional ornament in which grotesque figures or animals may form accessories, preference being given where the work is of an applied character for ordinary decorative purposes, as representing commercial value.—Seven works sent in.—First prize of 10*l.* to R. Baker, 11, King-street, St. James's-street, for a carving of a "Festoon of Flowers." Second and third prizes not awarded. Two extra prizes of 3*l.* each to G. H. Ball, 34, Albert-street, Regent's Park, N.W., one for a frame carved in pear-tree wood, and one for a frame in oak.

WORKS SENT IN COMPETITION FOR THE PRIZES OFFERED BY THE WORSHIPFUL COMPANY OF PLASTERERS.

Three works sent in: models of trusses.—First prize of 10*l.* to R. W. Hanwell, 59, Charlotte-street, Caledonian-road, N.; and second prize of 5*l.* to James Steele, jun., 25, Holmhead-street, Glasgow.

Part of the sum offered by the Plasterers' Company, 10*l.* (25*l.* in all), is to be given for a design for a frieze, a drawing, not yet sent in. The Company have liberally voted 25*l. per annum* for the advance of their art. It is to be hoped, the offer will be rightly taken advantage of. This has not been the case in the present instance with reference to the Society of Arts. The response is not equal to the inducements advertised. The sum of 600*l.* was offered in prizes, and of that only 144*l.* have been carried off. The subject needs inquiry.

The Yorkshire Architectural Society, it may be seen, advertise their willingness to give prizes for the best and second-best design, modelled in clay, for a bracket, boss, or spandrel of an arch. We direct attention to the advertisement in our last number in case it should have been overlooked by any of those to whom it is addressed. Modellers, carvers, and art-workmen generally have no reason to complain of want of opportunity to show what they can do.

WATER SUPPLY FROM THE CHALK FORMATION FOR THE BATHS AND WASH-HOUSES, GOLDEN LANE, CITY.

To meet the large demand for water required for the use of this establishment, it was estimated that it would be cheaper to obtain it from the chalk formation than to procure it from the water company, provided the quantity could be guaranteed.

The services of Mr. Thomas Tilley, artesian well engineer, were called in, who undertook to obtain the required quantity; and after two years of labour the long-sought-for water has been obtained in large quantity. The well is sunk through the London clays, and lined with 9-in. brickwork in cement, to a depth of 100 ft. from the engine-room floor; 50 ft. of cast-iron cylinders, of 5 ft. 10 in. outside diameter, were then inserted, with a view of passing through the upper green sand, and on to the chalk. This being accomplished, after much difficulty, a concrete invert was put in, by the aid of a diver, to form the bottom, in which an 18-in. guide-pipe was placed, and driven firmly into the chalk to about 6 ft. in depth, leaving 2 ft. standing above the concrete bottom or invert. By these means the chalk water was entirely cut off from connexion with the water from the upper green sand, instead of being left, as is often the case; as it was feared the sand absorbed a part of the supply from the chalk, which turned out to be correct; for, from experiments previously made on the water level, it was found to be lower by 12 ft. than after the connexion was cut off. The 18-in. boring was then continued to a further depth of 30 ft.; and afterwards, with a tool of 12 in. diameter, to a further depth of 100 ft.; making a total depth of 240 ft. from the level of the engine-room floor; or, 238 ft. from level of road. On taking the levels of the water when the engine was at rest, the water from the chalk was found to stand at 106 ft. from the surface of the floor line, there then being 29 ft. head of water in the shaft to pump from. Whilst testing the yield for thirty hours, it was found that, after lifting 250 gallons per minute, the level of water was only lowered 3 ft. instead of 12 ft., as was the case before the connexion with the green sand was cut off, and the supply was found fully equal to the demand. The water is raised by means of a set of three-throw deep-well pumps (on the latest improved principle), each of 8 in. diameter, with 2-ft. stroke, and working at their lowest speed, viz., fourteen strokes per minute. The pumps are so arranged as to be readily repaired under water; and the barrels being fixed near the bottom of the well, at least 20 ft. of suction-pipe could be attached and lowered down the 18-in. bore hole; so making, with the 29 ft. of water in the well, a head of water equal to 49 ft. to pump from.

By this means it is estimated that a much larger supply of water can be obtained. The water is described as bright and soft, and well suited for domestic purposes.

The power for driving the pumps is obtained from a 20-horse power vertical-motion engine, fixed near the well.

To show the value of the project, the establishment is provided with two large swimming-baths, requiring in the aggregate about 200,000 gallons of water. Hitherto they have been supplied by the water company, at a cost of 6d. per 1,000 gallons, or equal to 5*l.* sterling, each time they are filled, which is usually twice per week. The actual working expense for raising this quantity of water from the well into the baths is only 16s., thereby effecting a saving of 8*l.* 8s. per week.

The building, of which full particulars have been given in our pages, includes 84 private baths and 2 large swimming-baths; 84 laundry compartments; 2 Turkish baths, one for ladies, the other for gentlemen; 180 dwelling-rooms, let out to families; 1 spacious dining-room; and a chapel capable of accommodating 350 persons.

The works were executed at a cost of 40,000*l.*, and at the sole expense of Mr. A. J. Vieweg, of London; but the establishment has now passed into the hands of a company, under the direction of a few gentlemen interested in improving the dwellings and increasing the comforts of the poorer classes.

RAILWAY COMPENSATION CASES.

Grady v. *The East London Railway.*—The claim in this case was made in respect of fourteen leasehold houses, situated in Brunswick-terrace, and St. Helena-row, Rotherhithe; and the principal point in dispute was the question as to whether the present rentals should be taken as the actual value of the property, or whether—as was contended by claimant and his surveyors—an improved rental value had arisen upon the property consequent upon the proposed construction of the new park in the immediate vicinity, and the great demolition of houses in the locality for railway purposes, causing houses of this class rapidly to rise in value. Mr. Peake, of Tooley-street, was surveyor to the claimant, and he was assisted in the case by the following gentlemen, who gave evidence that they considered the property to be worth—

Mr. Arthur S. Newman	£5,243 0 0
Mr. Porter	5,419 0 0
Mr. Dickins	5,205 0 0
Mr. R. Eden	5,225 0 0
Mr. Wm. Smith	5,348 0 0

On the other hand, the company, whose case was conducted by Mr. Clifton, architect, called Mr. Clark, of the firm of Messrs. Farebrother, Clark, & Co., who assessed the value of the property at 3,111*l.*; and Mr. Ryde, of the South-Eastern Railway, at the sum of 3,085*l.* The jury, after considerable deliberation, gave the claimant a verdict for 4,200*l.*, which carried all costs.

Davies v. *The Metropolitan Railway Company.*—Some remarkable evidence was given in this case of the value of property in Kensington, which one of the witnesses declared had increased "beyond all calculation." The inquiry took place before Mr. Humphreys, the coroner, and a special jury, at the Sheriffs' Court, Red Lion-square. Mr. Karslake, Q.C., and Mr. Prentice appeared for the claimant of the house and shop, 7, Kensington-terrace, which had been leased for twenty-one years to Mr. Weatherley, at 70*l.* in 1860. Mr. Lloyd (Mr. Hollway with him) represented the company. The claim was 4,600*l.*, and the company had offered 2,300*l.* All the witnesses stated that property had greatly increased in value. Mr. Lloyd, for the company, called no witnesses, but addressed the jury, urging that the claim was excessive, and that the property was not worth the sum which had been mentioned. The coroner left it to the jury to determine the present value of the premises, and then to capitalise the amount. The jury gave a verdict for 2,700*l.*; and, that being beyond the offer, the expenses will fall on the company.

Balls v. *The Metropolitan Railway Company.*—This case (Court of Queen's Bench) raised a point of some importance relating to compensation cases. The question was as to the nature of an offer which relieves the company of costs in the event of the jury awarding less than the amount offered, and refused. The facts were these:—The claimant in November sent in a claim of 400*l.* for damage caused to him by the taking of his premises. The company made no offer, and the proceedings went on until the 4th of December, when the jury were nominated to assess compensation. Then on that same day the company made an offer of 140*l.*, which, however, was clogged with the condition that it should be taken to include all costs and expenses. The offer was refused. Costs to the amount, it was said, of 40*l.* had been already incurred, and the claimant went on until the case came before a jury, who gave him only 75*l.* The claimant, however, had claimed his costs, which the officer had taxed at 156*l.* The statute provides that if the verdict shall be given for a less sum than the sum offered, the claimant shall be entitled to no costs. The question was whether he was entitled to costs. After a long argument, it was observed by the Lord Chief Justice that the offer which the statute meant was an offer of compensation, whereas this offer included costs—an observation which the counsel for the company and the rest of the Court deemed conclusive. The Court gave judgment for the claimant.

INAUGURATION OF A GOLDSMITH'S STUDIO AT BIRMINGHAM.

Messrs. W. & J. Randel, of Vittoria-street, have been celebrating the opening of an art-studio on their premises. The manufactory and warehouse of this firm have been built on an extensive scale. The works cover altogether an area of 105 ft. by 54 ft., and they consist of a work-shed, 66 ft. by 9 ft.; a dressing-room, 66 ft. by 9 ft.; a casting-shop, 16 ft. by 16 ft.; and a stamping-shop, 26 ft. by 16 ft. In addition to these there are all the departments which are included in the requirements of a warehouse, consisting of show-room, 23 ft. by 16 ft.; rough warehouse, 26 ft. by 13 ft.; receiving-room, 20 ft. by 13 ft.; and a private room, 15 ft. by 11 ft. The warehouse and offices are separated from the work-shed by glass-windows only, so that all the workpeople are under the immediate supervision of their employers throughout the hours of labour. The work-shed is about 17 ft. in height, and is well lighted and ventilated. There are six rows of work-benches in the shed, at which about 100 hands can be accommodated. The whole of the building is warmed by hot-water pipes; and, exclusive of this, fresh warm air is introduced into every room, and the requisite outlets are provided for the vitiated air. The floors of the building, and also the roofs (with the exception of the work-shed), are fireproof. They are formed entirely of bricks, in the manner of arches, with only about 6 in. rise. The floors and roofs are on this principle in the factory of Mr. Wiley, in Graham-street, by the same architect. The front of the warehouse is in the Italian Gothic style of architecture. Mr. Bland is the architect of the building, and Messrs. Webb, Brothers, are the builders.

The room set apart by the firm for the art-studio is on the second floor, and measures 51 ft. by 16 ft. Here the firm purpose offering every facility for the study of art in its highest branches. Drawing and design classes will be held here two evenings in each week. There will be classes for adults, apprentices, and females. The whole will be free to the students (paper and pencil excepted).

THE RIVER COMMISSIONERS AT CROYDON.

The Commissioners appointed by Government to inquire into the state of the rivers of Great Britain are still continuing their inquiries. They have just held a public inquiry at the town-hall, Croydon, into the utilisation of the town sewage in the vicinity, especially as affecting the health of the inhabitants. The Commissioners were Mr. Robert Rawlinson, C.B., chief commissioner; Mr. John Thornhill Harrison, C.E.; and Professor J. T. Way.

Several members of the Board of Health were present, and underwent a searching examination; but the answers given were satisfactory and to the point. Much useful information was elicited from the different witnesses.

The Chairman (Mr. Rawlinson) opened the commission. He said they had come to Croydon knowing that the authorities had taken the lead in adopting main sewage and house drainage, the carrying out of which project had cost a considerable amount of money, and which, in the first instance, did not exactly carry out the object that was intended. They also knew the authorities of Croydon had been engaged in serious litigation with respect to the pollution of their stream, and that they had latterly carried out most successfully the utilisation of sewage. They, therefore, came down with a desire to obtain as much information as they possibly could, and in the best way they could, and they should be glad to hear any testimony that might be brought before them.

The first witness called was Dr. Carpenter, who stated that he had lived in Croydon about fourteen years. He remembered the great outbreak of fever, and he specially examined its nature. The fever prevailed in the best houses, and in the highest parts of the town; in the houses connected with the sewers, and in those unconnected. It was not infectious. The main sewers being insufficiently ventilated was, in his impression, one of the causes of the fever. Great improvements have taken place since then in the main sewers. They have had, several years in succession, a very low death rate. It has been as low as 16, and is generally under 20. As to the death rate before the Board was established, Dr. Westall one or two years stated it at 29, 28, and 27. The water supply, if properly carried out, will form a new item in the arrangement to secure a great amount of health. Sewerage alone will not ensure perfect immunity from preventable disease. Dr. Carpenter stated that in 1848 the death rate was 28; in 1849, 26; 1850, 20; 1851, 19; 1852, 22; 1853, 26; 1854, 26; 1855, 19; 1856, 18; and 1857 it was under 16. The Chairman asked the witness if he was able to draw any conclusions whether there are any injurious influences from the mode of irrigation; in reply to which he said, I have formed a decided opinion upon the subject. No injury has resulted to any one so far as it has come under my knowledge, so that the sewage may be applied to land without fear of injury to health.

Dr. Sutherland was next examined, and he stated that he had been in practice in Croydon for the last thirty years. He quite concurred in all Dr. Carpenter had said; but he wished to say a few words about the epidemic that visited the town some years since. At the time it occurred he had a strong conviction, which had been strengthened by subsequent experience, that the epidemic was chiefly caused by the want of proper ventilators to the sewers. There was one point he wished to refer to, and that was, that in the first outbreak the greatest number of cases of fever occurred in the High-street; but, since that time, there had been less fever in High-street than almost any other part of the town.

The Chairman said, when he first heard of the outbreak he was in the north of England. He soon afterwards saw Dr. S. Smith, and told him he was satisfied that the ventilation of the sewer-pipes was not sufficient in Croydon. He came down to Croydon, and saw the then surveyor to the Board, Mr. Cox. He spoke to him on the subject, and he learnt from him that there was no ventilation to the drains. There had been two or three points where they were ventilated, but (said he) the stench was so great that I had them stopped up. He said to Mr. Cox, "Why, man, should you not infer that, if there was a stench from two or three points, you ought to have opened thirty-two points rather than stop them up?" His report was sent in, in which he urged ventilation; but, as he had many other things to attend to, he did not know whether his recommendation was carried out.

Dr. Sutherland said, to carry out a complete system, regular flushing should be resorted to, as without flushing they were in danger.

The Chairman said they might take it for granted that gas from decomposition rose against gravitation, as sewage, which was heavier, flowed down with gravitation. Therefore, in sewage works, some persons thought it was the best plan to place sewers on steep gradients; but places with steep gradients were not so well for sewage works as a flat country. The sewage rushing down a steep gradient did not allow the gas time to escape that was generated in the higher parts. Thus it would be possible to make Brighton much worse than it was at present by spending 100,000*l.* upon it.

Mr. Close.—Are you in favour of pipe drainage?

The Chairman.—Where pipe drainage is sufficient to carry off the sewage they make far the best drains for a town; but I would prefer to

put down brick drains rather than pipes. However, where pipes can be used, they can be put in to advantage. Some people would have sewers made large enough for a man to get into them; but sewers should be no more cleaned out by human hands than chimneys. No human being should be sent below the surface to cleanse a sewer. Every sewer can be made to work without that.

Mr. Harrison (to Dr. Sutherland).—Do you infer that the former outbreak was caused by a want of ventilation; and since that has been carried out, although it is not even perfect at the present time, do you trace the present outbreak to that?—No; I do not attribute it to the sewers in any way. I think it is atmospheric causes and wet weather. I state distinctly that those cases within my experience were exceptional cases. The majority I attribute to the state of the roads. With respect to the drains, I also should recommend that no direct connexions be allowed between the houses and the sewers. I also recommend overflow-pipes to be carried outside.

At the close of the inquiry the Chairman said, we were on the eve of a great change with respect to the disposal of sewage, the utilisation of which was one of the great questions of the day. Mr. Marriage's farm had been visited by him, and he believed that gentleman had untied the difficult knot, by showing to all the world that sewage could be utilised, not only without injury to health, but with a fair amount of profit.

ARCHITECTS' RESPONSIBILTIES.

ENGLAND *v.* WYATT: IN COURT OF COMMON PLEAS.

THIS action, defended more on public than private grounds, deserves the attention of the profession. It was tried before Mr. Justice Byles and a common jury. In 1860, the defendant, Mr. T. H. Wyatt, who was superintending the works at Bemerton Church, Wiltshire, arranged with the plaintiff to lay certain tiling in the chancel. This was executed: an account was sent in first, according to plaintiff's evidence, to the defendant, though this Mr. Wyatt denied, and then to the builder of the church, Mr. Miles, who was bound to do the tiling under his contract, and for whom defendant had given the order. Miles objected to some of the charges, and would not pay the whole of the amount charged, and then plaintiff brought this action against the architect. The amount was 23*l.* 3s. 6d. Another item, 2*l.* 3s. had crept in, but this, it was explained by the plaintiff, was for cement ordered by Miles for his own use, and for which plaintiff did not pretend to have any claim against defendant. 14*l.* 10s. 1d. of Miles's money had been paid to the plaintiff. There was a little discrepancy as to the terms in which the architect communicated with the plaintiff at the first interview. The latter said he heard nothing of the builder on that occasion; while Mr. Wyatt believes that he told him that he had advised the builder to have the tiles laid by him (the plaintiff), as he was experienced and would lay them quickly. The Judge was about to sum up, proposing to submit to the jury—first, whether in ordering the goods Mr. Wyatt was agent for Mr. Miles; and, secondly, whether the plaintiff knew or ought to have known this; when the jury said it was unnecessary, and gave a verdict for the plaintiff for the balance, 8*l.* 13s. 5d.

It behoves the profession to take this decision into serious consideration, and to protect themselves carefully when making contracts and arrangements for others with tradesmen.

USES OF NATIONAL MUSEUMS TO LOCAL INSTITUTIONS.

THE paper read last week at the Society of Arts, Adelphi, on the uses of National Museums to local institutions, by Lord Henry G. Lennox, M.P., has been already largely reported by the press, and need not here be entered on at any length. The subject is an extensive one, for the paper treated not only of the question involved in the uses of national museums to local institutions, but also of that wider question with which it is so intimately connected, namely, the management of our national collections in their bearing on the education and enjoyment of the people. These collections, Lord H. Lennox is of opinion, ought not only to assume a more educational character, but to give a helping hand, by circulation and by gifts, to local collections in our various provincial towns. The management of such national institutions as the British Museum was not only faulty in these but in other respects, and ought to be reformed. The trustees lagged indolently behind the spirit of the age, and did not expend their vast revenue as they ought to do for the instruction and recreation of the people. The author advocated the opening of the collections on the week day evenings. His lordship concluded by saying:—

"I trust the discussion of to-night will be such as to strengthen the hands of the Chancellor of the Exchequer, and nerve him to add this to the many achievements of his political career—the breaking up the antediluvian system of irresponsible Boards, and the placing under a responsible minister of the Crown the control and government of our vast national collections, so that they may be managed in consonance with the wants of the age, and be made as available as possible for the education and recreation of the people, not only of the metropolis, but of the United Kingdom at large."

Professor Tennant, Mr. Ayrton, M.P., Mr. H. Chester, and Mr. Layard (the chairman), took part in the discussion. Mr. Layard said he could not advocate either the opening of the national collections after dark or the circulation of valuable art works throughout the provinces, but he thought the present was a fitting time to enlarge the utility of the British Museum and National Gallery, and it was probable that the subject would soon be brought under the notice of the Government.

THE PRESIDENTSHIP OF THE ROYAL ACADEMY.

THE Council of the Royal Academy met, as arranged, on Thursday night, when Sir Edwin Landseer repeated his resolution to decline the presidentship, on the score of uncertain health. Mr. Maclise distinctly expressed *his* determination *not* to accept it, under any circumstances, and begged his friends who had suggested to him his fitness for the chair, not to vote for him. On proceeding to the election, the numbers were, by a large majority (not equal to Sir Edwin's of the last meeting) in favour of Mr. Francis Grant.

It is needless to refer to the three or four other Academicians whose names received votes.

"THEATRICAL COMPLAINTS."

SIR,—In your last number and notice of the Drury-lane pantomime of the present season, my name receives "honourable mention," but doubt is expressed of my being the originator of the designs of the representations of the metals Copper, Tin, &c., which you approve, or whether they are not of foreign importation.

Kindly permit me to endeavour to remove every doubt upon the subject, by affirming myself to be the sole inventor of the whole of the characters referred to in "King Pippin," and also of the characters and appointments of "the opening" of every other pantomime produced at this theatre since the year 1851 to the present time, inclusive, my worthy authors' manuscripts being my only source of inspiration.

The models, also, have been the work of my own hands.

I shall be happy to submit for your inspection the whole of my drawings, &c., and refer unhesitatingly to the lessees, managers, and various members of the establishment, who from time to time have witnessed my labours, for entire confirmation of this statement.

DYKWYNKYN.

P.S.—The hints derived from the *Builder*, some years since, had reference to scenic modelling, I believe.

BUILDING LEASES AND EJECTMENTS.

IN the Vice-Chancellor's Court, on January 20, before Vice-Chancellor Sir John Stuart, the case Thompson *v.* Marquis of Normanby was tried. This was a Bill praying for a declaration that the plaintiff was entitled to have a building lease granted to him of a piece of land at Staithes, in the North Riding of Yorkshire, for such term of years and at such ground-rent and fine (if any) as the Court might think right; or that it might be declared that the plaintiff was entitled to purchase such piece of land from the defendant at a fair and reasonable price, or at such price as the Court might think right; or that the plaintiff was entitled to a lien on the above piece of land and the buildings thereon; and for an injunction to restrain an action of ejectment brought by the defendant against the plaintiff. The plaintiff, being desirous of renting additional houses at Staithes, applied, in April, 1860, to the agent of the late Marquis of Normanby for a piece of waste land in that village upon which to erect these houses; and, therefore, the plaintiff agreed with such agent to take that piece of land and hold it upon the customary tenure upon which the property in Staithes was then and now held, at the same price as that at which other sites in Staithes might be sold for, or to take a building lease thereof at a reasonable ground-rent. The bill alleged that the plaintiff, in reliance on the before-mentioned agreement, erected certain buildings on the above piece of land, having purchased some of the stones used for that purpose of the agent of the late marquis, to whom such stones belonged; and that the defendant and his late father were well aware of the above agreement. In the year 1863 the late marquis died, and was succeeded by the defendant. In October, 1863, the plaintiff was, at the defendant's instance, served with a notice to quit the houses and buildings erected by him, but he refused to quit possession of them. The defendant, in May, 1865, commenced an action of ejectment against the plaintiff, and thereupon the bill was filed.

Mr. Malins and Mr. Trevor were heard for the plaintiff, but Mr. Bacon and Mr. F. O. Haynes, for the defendant, were not called upon.

The Vice-Chancellor said that the plaintiff's case had totally failed. By his bill he had rested his case upon three grounds, but at the bar two of them had not been insisted on; and what had been argued was that, because the plaintiff had expended on the defendant's land certain sums of money in erecting cottages thereon, he ought not to be ejected without compensation, and that he had a lien on the land for the sum expended by him. The doctrine of the Court in cases of this kind was clear, and was to the effect that, unless there was negligence on the part of the landlord amounting to deceit, the person building was not entitled to relief. There was no pretence for any such case here, and the bill must therefore be dismissed with costs.

AN AIR AND LIGHT QUESTION.

IN the Vice-Chancellor's Court (January 26), before Vice-Chancellor Sir W. P. Wood, the case of Smith *v.* Owen was decided. The bill was filed for the purpose of restraining an alleged interference with light and air, arising out of improvements in the adjoining houses.

The plaintiff is lessee of No. 118, New Bond-street, a house with a projecting bow window, well adapted, as the bill alleged, for the display of goods, from the uninterrupted view of it commanded by persons walking or driving along the street from the northwards. The defendant, who is the lessee of No. 117, immediately adjoining the plaintiff's premises on the northward, had, about the beginning of 1864, commenced altering his shopfront by pulling down the portico and throwing out the shopfront, or street line, to an extent of more than a foot from the external wall, the commencement of the projection at the side nearest to No 118 being at a distance of five inches only from the nearest division of the plaintiff's window. The case made by the bill was that the defendant had materially impeded the access of light and air to the plaintiff's shop, and also destroyed its capabilities for the exhibition and display of goods. The defendant, on the other hand, insisted that the view of the plaintiff's window was actually improved, as the old portico had been removed and a level front presented to the street.

Evidence was given on either side, the effect of which is stated in the judgment of the Vice-Chancellor, who, without hearing counsel for the defence, said that no case had been shown on behalf of the plaintiff such as to call for the interference of the Court. If a person standing outside a shop window found the light reflected upon the window abstracted to such an extent that he could not see the goods exposed for sale in the window, then a case would arise for the interference of this Court. But that principle had not the slightest application to a case like the present, of a man not being able to see the window and the goods from the same distance as formerly. He knew no law which prevented a man, apart from any interference with light and air from building upon his own ground so as to prevent his neighbour's house from being seen. An illustration at once occurred to him from the period when the shops of London were distinguished by particular signs or emblems, such as the "Golden Ball," &c. It never could have been held that the Court would restrain a man from building his house so as to obstruct the view, seen by passers from a distance, of this golden ball or other emblem. It was quite obvious that, upon this branch of the case,—interference with the view of goods in the window,—there was no pretence for the suggestion of any appreciable injury as resulting to the plaintiff. Upon the question of direct interference with light and air, the evidence was wholly in favour of the defendant. The plaintiff had failed to make out any case for equitable relief, and the bill must be dismissed, with costs.

PLAYGROUNDS WANTED.

COUNTRY people have remarked to me that, twenty or more years ago, Cockneys were small and sallow as a rule; but now, if any one will observe the men who are poured into London by our principal railways each morning, he will not find a finer body of men in the world. This change is caused by living in the suburbs, and, in the younger men, by their joining the Volunteers. The fresh air and the exercise have done it all; and I venture to say the change for the better in their morality is as great. If you want to raise a class in civilization, you must begin with the body. The ancient Greeks knew that better than we: witness the care they bestowed on muscular development simultaneous with mental training, and the splendid life resulting therefrom.

As the merchant is the pioneer abroad of the missionary, so should the builder be at home. Half of the places called houses ought, as Thos. Carlyle would say, "to be swept into the dust-heap;" and it would pay in the long run for John Bull to do it; and, when he does it, he should remember that, as man's spirit can only act through his body, and that, as it is almost impossible to have a healthy mind in an unhealthy body, it is right to attend to the welfare of both.

One of the greatest natural wants of life is amusement. Life is God's gift, and the fuller of life any individual or animal is, the fuller of fun.

The very word "lively"—life-like—means it. Look at a kitten, for instance. Give a child too little amusement, and he grows up stunted in mind, body, and soul. Give him none, and he dies. This law is as inexorable as that which makes breathing sewer gases fatal. Bearing this in mind, walk through the courts of Shoreditch, Whitechapel, or any of the places so faithfully drawn in your paper some time ago. Then ask yourself how you would like the task of educating in these slums, for time and eternity, your children, which you find so difficult a task even in your sunny home in the suburbs.

Workmen's clubs are a right step, but only a step. While he is enjoying himself there, what are his wife and children doing? Poked away, perhaps, in one, or it may be two, rooms, in which, perhaps, the only ornaments consist of the clothes-lines nailed from wall to wall, on which are hanging the clothes just washed; and in that room the children are confined all day. Perhaps they are sent to the national school, to be out of the way; but the best national school is a playground, until a child is six or seven years old. Take the case of a shopkeeper in London. When his children return from school, he cannot allow them to run about the streets; therefore they must remain indoors, and thus grow up weak, or half of them die off.

The workmen's trains, to enable them to live in the suburbs, ought to lessen the evil, one would think; but the process is being repeated. Long rows of cottages are run up, with yards behind in which you cannot comfortably "swing a cat" by the tail; and the country is suddenly transformed into the town. The inevitable tavern comes first at the corner; a few shops next it; the rest of the land crammed with cottages, thirty to an acre. Go where you will it is the same. On Plaistow Marsh a second Ratcliffe-highway is springing up; on the Isle of Dogs the Ironmongers' Company are getting their land "covered," as it is called, in like manner; so it is on the land behind the Old Kent-road,—all on the principle that a man's life is only to eat, drink, sleep, then die.

We are told that the works of men follow them into the next world. Is there no member of the Board of Works anxious to have such a following,—shrewd enough to grasp the real magnitude of this question, and to see that it involves consequences which act with tremendous force upon the physical and moral well-being of any community?

J. P. WATERSON.

"WING SIGNAL" BETWEEN PASSENGERS AND GUARDS.

A SIMPLE and easily-worked signal has been invented by Mr. Sinclair, of the Conservative Club, and set to work (successfully it is said) on one of the carriages of the North British Railway, by way of experiment. It has been thus described:—

"The apparatus is fitted up at the end of each carriage, and consists of two sheet-iron wings, painted white with a black border, which are fixed on iron rods, and move on hinges. Attached to the 'wing' rods is an iron chain with a small ring at the end. In the centre of the end of the carriage is fixed a perpendicular rod, in which moves a large iron detent-ring: to this is attached the chain, which is carried through the whole length of the carriage on both sides. Below this fixture is placed a loose pin; and, when the signal is set for use, the chains attached to the wings and the large ring of the 'pull' from the interior of the carriages, are slipped on the pin. In this position the wings are kept out of sight behind the carriage, but immediately on the chain in the carriage being pulled, the large detent-ring is drawn over the pin, and by their own weight the wings fall to the side, and are exposed to the observation of the guard. The wings are each 2 ft. long and 1 ft. broad; and being placed at the top of the side of the carriage, are easily noticed by the guard from his sentry-box in the parcel-van." By night a light in front will be so placed as to be intercepted by the signal when made and seen from the guard's van.

It is not intended that when the guard sees the signal displayed he shall immediately stop the train, but that "it shall be considered as a 'signal of distress,' and that the train is required to be stopped at the first convenient opportunity, unless in a case of the most urgent necessity."

This signal may be quite efficient, as a signal; but the quotation just made shows clearly that no signal is in itself sufficient for the purpose in view. How is the "urgent necessity" to be judged of by the imprisoned and helpless guard? Suppose that a murder, or a criminal assault on a woman, is being committed, and that the signal is made: of what preventive use will it be to stop the train "at the first convenient opportunity?" Or again, suppose that some nervous old woman of either sex is screaming or hollaing out of the window, while also making the signal, on account of some imaginary danger (and not of course from any voluntary motive of a larking or mischievous nature), is that to be considered by the boxed guard as a case of "urgent necessity?" With facilities for the guard to traverse the train, and judge by his own eyes and ears, *at the carriage signalled from*, such signals as Mr. Sinclair's might no doubt be useful; but would they be necessary, if the duty of the guard were occasionally to traverse the train from end to end while in transit? The public ought to insist upon arrangements to this effect, and nothing short of this will do. The question of signals, as an adjunct, may then be fittingly considered.

RIVERS AND SEWAGE.

SIR,—Allow me to thank you for the paragraph on the "Drainage of Chatham," p. 71. It is absurd to suppose (as many do) that Government will pass a universal law of prohibition against sewage entering an open tideway, in cases where local flushing can be obtained, or where no towns are affected below it. To apply my idea of flushing a river to the Thames, it will only be necessary to pen the fresh water up at Teddington Lock, during the flood tide, and then let it off at the commencement of the ebb, as fast as the gates can be drawn, and when the head is run down, shut the gates to obtain another head, repeating the operation at every turn of tide downwards.

Of course, existing rights must be compensated, but there can be no doubt that much purer water would be found in the river where it is now found to be offensive. And of course this flushing would be limited to the spare water of the river after the water-works are supplied; nevertheless, considerable amelioration may even now be obtained until Mr. Bateman's gravitating supply comes to hand. And I am of opinion that his powers of supply should be taxed to the utmost, in order that the whole sewerage of the metropolis may be flushed with fresh water. By this means, and this only, will the town be kept sweet and wholesome; and, as the opportunity is now before the public, provision should be made to embrace it, as it is hardly probable that the additional cost would follow the increased supply of water. It should be added, that this scouring or flushing the sewers would only be necessary in dry weather, when, in fact, it is most necessary.

W. THOROLD, M.Inst.C.E.

DISSENTING CHURCH-BUILDING NEWS.

Brecon.—The foundation-stone of a new chapel for the Calvinistic Methodist body has been laid here. The design was prepared by Mr. W. F. Poulter, of Reading. The contractors are Messrs. Williams & Sons, builders, Brecon, whose tender was 2,052*l*. The chapel will be in the Gothic style. The principal elevation will be on the south side, within a few feet of the Walton-road, at which end there will be three principal entrances. The south-east angle will be erected in octagon form, surmounted by a spire 87 ft. high. The chapel, with an apse at the north end, will measure 58 ft. by 33 ft. clear. At the north end will be a school-room, 39 ft. by 22 ft., and also at the north end of the chapel will be a class-room, 13½ ft. by 11 ft., as well as a vestry-room.

Luton.—The chief stones of the new chapel, to replace Bunyan's "Old Meeting," in Park-street, have been laid by Sir S. Morton Peto, bart., M.P., and Mr. John Everitt. The proposed building is to be of plain brick, erected at a cost of something over 2,000*l*., by Messrs. Smart Brothers, of Luton, and will accommodate 1,200 persons. The architect is Mr. Warburton Stent.

Clifton.—The chief stone of the new chapel, Clifton College, to be raised in memory of the late Canon Guthrie, has been laid by his widow. The chapel, which will cost 4,500*l*., the total expenses being defrayed by Mrs. Guthrie, is to be dedicated to St. Paul. The style is to be Early Decorated. The ground-plan consists of nave and chancel, with ante-chapel and porch at the west, an organ-chamber and vestry on the north of the chancel, and a tribune for ladies over the ante-chapel, to which access is gained by an octagonal staircase, groined in stone in the tower adjoining. The tower will be erected by the College Company, as a tribute of respect to the memory of their late chief, and to be called the "Guthrie Memorial Tower." The walls will be built of stone quarried on the ground, with dressings of Bath stone. The design is by Mr. Chas. F. Hansom, the architect of the College buildings, and will be carried out under his superintendence by Mr. James Diment, of Bristol, who is also the contractor for the additions to the College now in progress. The total internal length is 125 feet.

Todmorden.—The foundation-stone of a new Unitarian church has been laid at Todmorden, on the hill-side opposite the railway station, by Mr. Samuel Fielden, the senior member of the firm of Messrs. Fielden, Brothers, of that place. The estimated cost of the building is 12,000*l*., the whole of which will be paid by Messrs. Fielden, Brothers. The building will be a stone Gothic structure, worked out in the Decorative style of the fourteenth and fifteenth centuries. At the west end an octagonal spire will rise to the height of 150 ft., and will stand out conspicuously on the hill-side. The masonry will be executed under the immediate supervision of the firm, aided by the architect, Mr. Gileson, of London.

Liverpool.—The chief stone of a Welsh Wesleyan chapel has been laid in Shaw-street. The building will be in the Italian style of architecture, with a frontage towards Shaw-street, about thirty yards in length, of polished Stourton stone. The chapel will be entered on a level with Shaw-street, through a porch pierced with three lofty doorways. The porch will be surmounted by a pediment carried on Corinthian columns, separate entrances and stairs being provided to each gallery. The chapel will be twenty-four yards long and seventeen yards wide inside; the roof in one span, with a flat ceiling under. The space under the chapel is designed for a school-room or lecture-room, with six class-rooms, and accommodation for a resident keeper, &c. Owing to the fall in the ground, this part of the building will be unusually lofty and convenient, and will be entered on a level from Haigh-street. The works are being carried out by Messrs. Nicholson & Ayre, from the designs and under the superintendence of Mr. John Denison Jee, architect, Mr. Humphrey being clerk of works. The edifice, with the site, will cost about 8,000*l*., of which 1,500*l*. have been presented by Mr. Maurice Williams.

Redland.—The foundation-stone of a new Wesleyan Chapel has been laid at Redland, by Sir S. M. Peto. The chapel is to be erected on a site adjoining White Ladies'-road, at an estimated cost, including land, of 5,000*l*. It is intended to accommodate 850 persons. The design is in the Decorated style of Early Gothic architecture, with details slightly French. The chapel is to be lighted on each side with long two-light windows, with buttresses between each window. There will be two side galleries, and one at the end over the entrance, as well as an organ-gallery behind the pulpit. The pews will have sloping backs and low doors. The chapel is to be spanned by a single roof, of the collar-beam form. The walls throughout are to be stuccoed. Underneath the chapel a basement-floor is provided, consisting of a large room, 12 ft. high, for public meetings, &c.; several class-rooms, dwelling-rooms for chapel-keeper, &c. The building is being erected of sandstone, obtained from the site. The fronts will be all of polled stone, in random, ranged courses, and pointed; the dressings of freestone. Cathedral glass is proposed for the windows. The roofs are to be covered with Bangor slates. The contractors for the erection are Messrs. Eastabrook & Son, Bristol, whose contract is 3,622*l*.; and the architect is Mr. Samuel Hancorn, of Newport, Monmouthshire, whose design was selected from several others submitted in competition.

CHURCH-BUILDING NEWS.

Chetnole (Dorset).—A new aisle has just been added to the church here, which was some few years ago restored, and a new chancel has been built. The aisle is on the north side, and is of lofty and wide proportions. The roof is gabled, and boarded and panelled on the inside, as is usual in this district. The windows are of three lights, with Perpendicular tracery. The arcade is of four bays, with moulded arches, supported on clustered columns, with carved capitals. The stone used is from the Ham-hill

quarries. The new seating is of pitch pine, to correspond with that of the nave. A new reredos, of carved stone and marble, is to be erected, and a new pavement in the sanctuary laid down. The works have been carried out, from Messrs. Slater & Carpenter's designs, by Mr. Down, of Sherborne, under Mr. Farrall, as clerk of works. The carving is by Poole & Son, of Westminster.

Kidderminster.—The new workhouse chapel has been opened. The edifice was erected from the design of Mr. Hopkins, of Worcester, the Diocesan Society's architect, by Mr. Nelson, of Dudley, builder. The style is Early Decorated, and it is built of red brick with stone dressings. It consists of a nave, chancel, and sacrarium, and is 68 ft. in length, 26 ft. in breadth, and 17 ft. in height to the wall-plate, or 40 ft. to the apex of the roof. Its fittings are open seats with sloping backs, stalls, &c. The roof is open, the woodwork being stained and varnished. The chapel is warmed by one of Gurney's stoves. The number of persons it will comfortably hold is 222 adults and 50 children, and its cost will be about 700*l.*

Tunbridge Wells.—A reredos has just been erected in Ashurst Church, the gift of Mr. G. Field, of Ashurst Park. The work is in Caen stone; the carving is executed by Mr. Forsyth, of Hampstead, after a design by Mr. H. W. Curzon, architect.

Grimsby.—St. Peter's Church, Cleethorpes, is to be completed forthwith. At a committee-meeting lately held, the tender of Mr. Maxey, of Louth, for the internal work, was accepted, and the church is to be ready for consecration by the end of May. In the plans of Mr. Fowler, of Louth, there is a tower with spire appended, but for the want of funds the tower is only raised to a little height, and in its unfinished state is a great eyesore to the rest of the building. It appears that the residents of Cleethorpes are unwilling that the beauty of their church should be marred by such a defect, and at a meeting recently held it was proposed and unanimously agreed that an effort should be made to complete the tower. Accordingly a committee was appointed for raising the required funds.

Radcliffe, Manchester.—St. Thomas's Church has been lighted. It is fitted up with polished brass standards, of nine lights each, brackets, &c., by Mr. J. W. Dovey, of Manchester.

Southwold.—The church here is to be restored. Mr. R. M. Phipson, architect, has reported upon the whole building. His report states that the nave and chancel roofs require a thorough overhauling and repinning together, the timbers having begun to spread or open at their various jointings, as well as some of them being much decayed. The lead covering is stated also to have become so bad that nothing short of entirely relaying it with new metal is required. The stone parapet which was commenced at the east end by the original builders, but which was never completed, should now be finished. The action of the sea air on the clerestory windows has brought the stonework of them into a very decayed state, and they all, more or less, require careful restoration. Many of the windows and portions of the church are also stated to require restoration. The cost of all these works the architect estimates at 1,400*l.*, and nearly 1,100*l.* of this sum has already been subscribed. The works will be done as far as possible by local tradesmen, and will be commenced immediately. The architect in his report strongly urged the removal of the west gallery and the opening out of the west tower, arch, and window; and although several parishioners were in favour of it, the gallery has been so recently erected that it was deemed desirable not to wound the feelings of contributors still alive by taking it down at present.

Blackburn.—The chief stone of St. Michael's Church, Brookhouse, the building of which was commenced some years ago, and interrupted by the subsequent distress, has now been laid. The edifice was designed by Messrs. Stevens & Robinson, of Derby, architects, and will accommodate about 800 persons. It is being constructed on land adjoining the school-house on Whalley-road, exactly opposite the convent of Notre Dame. The plan consists of nave with north and south aisles, divided from it by arcades of five arches, and together measuring 72 ft. by 51 ft.; chancel, 32 ft. by 22 ft.; and an organ-aisle and chancel on the north side of the chancel, 26 ft. by 13 ft. The tower is placed at the south-east angle, with arches, opening one into the chancel and one into the south aisle; it will be arranged as a baptistery, and the font placed in it. There are two main entrances; one through a porch on the south side of the church, the other through the tower: there is also an entrance for the clergy into the vestry. The elevation is designed in the English Gothic style of the thirteenth century. The church will be built of stone, with two or three light tracery windows in aisles, five-light east window, rose-window in the west end, and large-sized trefoil windows in the clerestory. The tower will be 70 ft. high from the level of the ground, and on it will be a spire 76 ft. in height with large spire-lights and broached pinnacles. The woodwork of the roof and seats throughout will be of deal, stained and varnished. The height of the nave from the floor to the apex of the roof will be 50 ft., and of chancel 44 ft. The foundations of the church throughout have already been built to the plinth moulding, and owing to the rapid slope of the ground on the north side are seen rising 28 ft. above the level of the river which here forms the boundary of the churchyard. Mr. Richard Hacking, of Blackburn, is the contractor for the completion of the building.

PROVINCIAL NEWS.

Cheshire.—At the Cheshire Quarter Sessions, lately, the report of the committee appointed to consider whether it was necessary to build a new asylum, was taken as read. The report may be briefly summarised thus:—The committee considered that it was necessary to build a new asylum, and that it should be erected in the Macclesfield Hundred, in the north-eastern division of the county, and that the quantity of land to be acquired for the purpose should not be less than 60 acres. On the motion of Earl Grosvenor, the report was adopted, and the committee re-appointed to consider the most eligible site and price thereof, and to report to next sessions.

Carlisle.—The County Hotel, at the entrance to the city from the Citadel Station, is about to be extended, and a new hall erected in connexion with it. The architects of the extensions are Messrs. Cory & Ferguson. The hall will be 70 ft. long by 35 ft. broad, and about 30 ft. high, and will accommodate 500 persons.——The new premises, says the local *Journal*, which Mr. C. Ling, provision merchant, is about to erect in English-street, in this city, on the site of the Woolpack, will be an additional acquisition to the architectural features of Carlisle. The architect is Mr. John Hodgson. The building will occupy a frontage of 47 ft. The elevation displays an example of the Venetian style of architecture, adapted to the necessities of modern times. The building is of four stories, rising to the height of 48 ft. In the centre of the front will be a wide gateway, affording a cartway to the warehouses at the rear of the building. The material used for the front is white fire-brick, relieved by bands and dressings of red and white inlaid with green slate. Iron balconets, finials, and surmounting railings, and iron trellis-work on the chimney-tops, will give a finish to the whole design. The extensive warehouses in the rear, extending six stories in height, will be devoted to Mr. Ling's use.

Norwich.—The building erected in London-street for the transaction of the business of the Consolidated Bank is now completed and opened. The style of the building resembles that in which some of the principal houses in Northern Italy were built during the early part of the seventeenth century; and the windows on the first floor are somewhat similar to those in a like position in the Palazzo Fibbia, at Bologna. Most of the other details, we are informed, are the result of studies made personally by the architect while in Italy. The caps to the columns are designed from the different water-plants which grow in the Norfolk rivers, all as a matter of course conventionalized to suit the character of the architecture. The whole of the London-street front is built with Bath stone, the columns being of polished red granite. The frontage next the Castle Meadow is entirely in red brick—a material which was constantly used at the period of the style in Northern Italy. The size of the bank is 44 ft. by 30 ft. It is 18 ft. high, and has manager's and waiting rooms behind. The walls are lined throughout with pine varnished; and oak partitions, filled in with ground plate-glass, divide the bank from the anterooms. The ceiling is divided by beams into panels, in four of which are sunlights; and there is a large fire-proof strong room in the basement, built in firebrick and afterwards lined with iron, with Milner's treble fire-proof door to it; a similar door separating the bank from the private house, which will be occupied by the chief cashier, but which has no connexion with the bank further than by a fire-proof door. All the windows on the ground-floor, back and front, have Messrs. Bunnett & Co.'s fireproof and thief-proof shutters. The cost of the whole building, including fittings, but exclusive of the land, will be about 4,000*l.* The architect was Mr. R. M. Phipson, of Norwich and Ipswich; and the contractor was Mr. Hall, of Norwich. The carving has been executed by Mr. Barrett, of Norwich; and the stone-masonry by Mr. Stanley, of St. Stephen's.

Books Received.

About Railways. By William Chambers, of Glenormiston. W. & R. Chambers, London and Edinburgh.

THIS little volume gives a very interesting and popular account of our British railway system, and also a glance at foreign and colonial railways. It treats specially of legislation and management, construction, rolling stock, traffic, tickets, clearing-house, metropolitan railway links, curious railway undertakings, statistics, and cheap railways. Under the last of these heads Mr. Chambers mentions that although 40,000*l.* per mile is not uncommon as the cost of a railway in England, much cheaper ones can be produced in Scotland. One, he particularly refers to, namely, the Peebles line, of which, if we mistake not, he is himself the chairman, as having cost only 5,000*l.* per mile; and hence, although in a comparatively thinly-peopled district, it yields a dividend of 6 per cent. per annum. The reason given by a railway engineer for this comparative dearness of railway construction in England is rather curious, when national character or at least reputation is considered. It is "because English directors insist on having fine stations, and will not generally work unless they have some special advantage in view; while, in various instances, Scottish directors, from some local patriotic feeling, not only exact no remuneration, but are satisfied with stations and other equipments of a very modest description."

Although the volume under notice is merely the result of some leisure half-hours, it contains throughout obvious evidence of an observant and practical mind, well accustomed to popular writing, and will be read with pleasure and profit both by home and by foreign readers.

Miscellanea.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.—There was an ordinary general meeting of the Institute, in their rooms, Great Brunswick-street, on Thursday evening, the 18th of January, Mr. G. Wilkinson, J.P., in the chair, when a paper was read by Mr. W. Fogerty, Fellow, on "The Architecture of Ancient Egypt."

RAT-KILLING EXTRAORDINARY.—A rather new and curious use of electricity is now being made in the Paris sewers, we are told. There, as is well known, rats swarm by millions. Wires, 100 mètres long, insulated by glass feet from the ground, and connected with a strong battery, are spread through these subterranean walks. Little pieces of roast meat are attached to the wires at short distances, and the rats, by nibbling at the bait, bring down the shock with terrific power upon their bodies. Death is almost instantaneous, and the morsel moreover remains intact, ready to destroy other victims.

THE QUEEN'S PENSION TO MISS ROBERTS.—There are many of our readers who will learn with sincere pleasure of the Queen's grant of a pension of 200*l.* per annum out of the civil list to the daughter of the late Mr. Richard Roberts, whose inventions and life-long labours as an engineer contributed so much to the wealth of Great Britain. Apart from the public services thus graciously recognised, and in some small proportion rewarded, the character of the immediate recipient—a young lady who has sacrificed much of personal ease, and even of health, to the preservation of her father's fame—gives to the grant an additional fitness and significance.

TROYON'S PICTURES.—The late M. Troyon's pictures, 150 in number, sold under his will, produced the sum of 15,000*l*. People are wondering what the Marquis of Hertford intends doing with the number of costly pictures he purchases and sends to England.

DRAINAGE OF FRANKFORT-ON-MAINE.—Frankfort-on-Maine is to be supplied with a thorough system of drainage in the English style. The civil engineers engaged by the municipality to superintend the works are Messrs. W. Lindley, of London, and T. Gordon, of Carlisle.

KNOWLEDGE WANTED. — "We niver had naw ventilashun when I lived wit' auld squire: nowt' o't sort," said an old servant to his master. "You must have had some ventilation, Tom," said the master, as he looked at the well-stuffed-up stable; "your cattle could not have lived without it." "Mebbe; but I niver seed it, nor naw sike thing; and I knawed iverything that coomed in and oot n't pleace."

THE HULL TOWN HALL.—The opening, as we announced, took place on the 25th ult. The statue of Edward I., who made Kingston-upon-Hull a royal borough, and which has been placed in the new town-hall, as a gift from Mr. William Hodge, of Newington Hall, one of the aldermen, was unveiled on the occasion of the opening, by the Lord High Steward, Earl de Grey and Ripon. The decorations have been ably executed by Mr. J. L. Coulton, of London.

THE PARK FOR MIDDLESBRO'.—The 70 acres of land so munificently presented to the town of Middlesbro' for a public park by Mr. Bolckow, are at present being broken up, with a view to the formation of the grounds. A number of workmen are at present engaged, and considerable progress will no doubt be made when more favourable weather sets in. The place is admirably adapted for the purposes of a people's park.

THE PROPOSED NATIONAL EXHIBITION OF PORTRAITS.—The town clerk read a letter from Mr. Norman McLeod on this subject at a recent meeting of the Salisbury council. It was stated that the corporation possessed some valuable and interesting portraits, amongst them that of Chiffinch, to whom allusion was made in Scott's "Peveril of the Peak," and who lived in the time of Charles II. It was believed to have been painted by Greenhill, a Salisbury artist, and a pupil of Lely. It was agreed to forward to South Kensington a list prepared by the town clerk, leaving it to the authorities to select such pictures as they might think proper.

PROPOSED HARBOUR AT FILEY.—The Harbour of Refuge Commissioners some years since reported to Parliament that there was no place so suitable as Filey Bay for a harbour of refuge for the east coast, being adapted by nature for the purpose, and being most accessible of any bay between the Wash and the Tay. The present Government have taken no interest in the matter, and therefore what they refused to do certain capitalists propose to carry out by private enterprise, and have obtained for the purpose the Filey Pier and Orders Confirmation Bill, 1864. It is now desired to float the company, and a public meeting has been held at Filey for the purpose of getting the inhabitants to take shares to the extent of 10,000*l*., 30,000*l*. having been otherwise raised, and a contractor being ready to take 20,000*l*. in shares as payment. The estimate is 100,000*l*.

APPLICATION OF THE ANILINE DYES TO PAINTING.—It is found that all resins having acid properties—caoutchouc and the aniline dye-stuffs—dissolve in the solution of aniline. Shellac is thoroughly soluble in it, and the resulting solution may be coloured with the concentrated solution of an aniline dye-stuff, the result being an excellent material for producing transparent paintings on glass, porcelain, &c., to which it very firmly adheres. The aniline dye-stuff may be dissolved directly in the aniline solution of shellac, with the aid of heat; but not fuchsine, since this, when heated with shellac, is changed to blue: hence, when this substance is to be dissolved, a solution of it in aniline, prepared without heat, is to be mixed with the aniline solution of shellac. These shellac solutions of the dyes may be mixed with oil paint not containing lead, and thus a brilliancy of tone may be imparted to the various colours in oil which they do not themselves possess. — *Scientific Review*.

THE ROYAL GOLD MEDAL FOR ARCHITECTURE. The council of the Institute propose to recommend Mr. Butterfield as the recipient of the Royal Gold Medal this year.

THE IRISH ALBERT MEMORIAL.—A correspondent wants to know what site may (at last) be settled on for the Dublin monument to Prince Albert, and the premiums which the committee will award to the best designs.

BUILDERS' CLERKS.—It will be seen by our advertising columns that a meeting is to be called speedily, for the purpose of talking over a proposed Association of Builders' Clerks. All who feel interested in the matter should attend when the day is named.

ANOTHER DEATH BY A HYDRAULIC LIFT.—An inquest is being held on the body of Henry Girling, a porter, employed at the Great Western Railway Hotel, who was killed by the lift used in the hotel. The coroner, Dr. Lankester, states that he has held three inquests in such cases during the last twelve months.

A CAP FOR DRAWINGS.—The "Patent Cap" advertised in our columns by Messrs. Wallis & Co., will be found useful, especially in stacking rolled drawings likely to be wanted. The end gives space for written name, &c., so that the required roll may at once be found.

INCREASE OF THE BRIDPORT SURVEYOR'S SALARY.—At the last meeting of the local Highway Board it was resolved that Mr. Cox's salary should be increased from 175*l*. to 200*l*. a year, and also that a gratuity of 25*l*. should be presented to him in acknowledgment of past services rendered to the Board.

LONDON.—There are, it appears, 339 thoroughfares in the city of London, and 163 of these are only of a sufficient width to allow of a single line traffic, while there are 101 which afford only a double line traffic, and only 70 which afford room for three lines or more. There are 60,000 vehicles passing daily through the city.

A SCULPTOR STABBED IN ROME.—Mr. Lawrence Macdonald, the well-known sculptor, was recently attacked by three persons, while ascending a common staircase, on a visit, between nine and ten p.m., and stabbed in the neck. The villains were scared, otherwise, it is believed, Mr. Macdonald would have been robbed, and perhaps murdered outright. It is not thought the wound is very dangerous, and Mr. Macdonald is progressing favourably towards recovery.

WORCESTER ARBORETUM.—The inhabitants, at a meeting to consider an offer of Earl Dudley to aid in retaining the Pleasure-grounds for behoof of the citizens, resolved to take means to obtain the votes of the ratepayers upon the desirability of the town council investing the sum of 5,000*l*. from corporation property or from the rates, in aid of the purchase of the Pleasure-grounds, to be vested in the corporation or the local board of health for the perpetual use of the citizens.

CLIFTON SUSPENSION BRIDGE.—We have heard that the directors of this company have determined to recommend a dividend at the rate of 2½ per cent. per annum, for the six months ending the 31st of December. The last, and, indeed, the first, dividend was at the rate of 5 per cent. per annum, therefore the present is a very serious falling off. We understand, however, that the decrease is owing mainly to the large local rates which have been charged upon the work. We believe that the bridge has been assessed at something like 800*l*. for the Somersetshire side, and 800*l*. for the Gloucestershire side.

PRESERVATION OF COMMONS AND OPEN SPACES. A public meeting has been held at the Mansion House upon this subject, under the presidency of the Lord Mayor, when resolutions were agreed to,—"That the preservation of the commons and open spaces in the neighbourhood of London is absolutely essential for the health and recreation of the public,"—"that it is incumbent upon the Legislature to deal with the subject of open spaces, and that the meeting pledges itself to support the Commons' Preservation Society in its efforts to press the question upon the Legislature;"—"that subscriptions be invited from those present, and a list of subscribers be opened at the Mansion House;"—and that petitions be presented to both Houses of Parliament urging immediate legislation on the subject. Messrs. Ransom will act as bankers.

MR. PEABODY.—This munificent gentleman has added a further sum of 100,000*l*. to his former gift to the poor of London, making it in the whole a quarter of a million.

TENDERS

Accepted for erection of tavern, &c. for Mr. William Purkiss. Quantities by Messrs. Pain & Clark:—Green:—

Public-house and fittings	£2,891 0 0
Private house	355 0 0
Shop	330 0 0
Sundry works	403 0 0

For eight pairs of semi-detached cottages, at Wimbledon, at per pair. Mr. T. H. Hill, architect:—

Gay	£437 0 0
Harmer	392 0 0
Crouch & Son	375 0 0

For a new warehouse in Wimbledon-street, Leicester, for Messrs. Hart & Levi. Quantities supplied. Mr. Francis Drake, architect:—

Johnson	£5,494 0 0
Osborne, Brothers	5,367 0 0
Cox	5,191 0 0
Kellett	5,133 0 0
Porter	5,073 0 0
Hutchinson & Son	4,853 6 0
J. H. Johnson	4,750 0 0

For the extension of Messrs. Courage & Co.'s brewery premises, at Horselydown. Quantities supplied by Messrs. R. L. Curtis & Son. Messrs. Davison & Scannell, architects:—

	Main building.	Extra for Cellars.
Lawrence & Sons	£10,883 0 0	£1,120 0 0
Piper & Wheeler	10,587 0 0	1,195 0 0
Brass	10,428 0 0	1,157 0 0
Myers & Sons	9,999 0 0	1,039 0 0
Sanders	9,995 0 0	1,152 0 0
Wells	9,890 0 0	985 0 0
Maraland & Son	9,795 0 0	985 0 0
Hart (accepted)	9,780 0 0	972 0 0

For alterations at Church House, Stanwell, for Mr. R. B. Cooper. Mr. F. C. Clark, architect:—

Oades	£891 0 0
Hardy	670 0 0
Tye & Andrew	667 0 0

TO CORRESPONDENTS.

Messrs. M.—H. T.—Mr. R.—J. B.—G. M.—J. G. (send particulars at convenience).—E. W. P.—J. K.—A Builder's Clerk.—An old Servant.—Sergeant B.—W. L.—F. W.—B. A.—M. J.—F. W. R.—W. & F.—J. R.—J. M.—H. L.—J. C.—T. & A.—Mars (no offence meant).—T. L. J.—W. F. S.—C. J. H.—P. & C.—J. L. C.—E. P.—Dr. D.—E. D.—Messrs. H.—C.—E. C. H.—G. C.—G. M. H.—J. N.—C. H. D.—American Pine (the paper has not yet been read).—K. K. (if the walls are not now dry can es must be at work to keep them damp).—F. T. (there is no certain evidence of such difference. Some of each is bad).—Beta (if names are not written legibly correspondents must take the consequence. We have no consideration for people who write their own names so that they cannot be read).—F. J. F. (shall have attention).—X. B. k (ditto).—V. (ditto).—G. S. C. (ditto).—J. E. (send us particulars).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

[ADVERTISEMENTS.]

COMPOSITE SHIP-BUILDING.

TO THE EDITOR OF "THE BUILDER."

Sunderland, Jan. 18, 1866.

SIR,—A letter of Mr. John Jordan, in your paper of the 6th instant, criticising an article relating to our practice of the composite system of ship-building, which appeared in a preceding number, has just been brought under our notice. *Suppressio veri, suggestio falsi.* His claim to originality as a patentee of the principle being as yet virtually disallowed in the Law Courts, it would assuredly have been in better taste, and more accordant with a recognised rule, to have abstained from any reference to a suit now pending. The *Times* law report of the 16th instant, will show in how far Mr. Jordan's self-gratulation is warranted. The patents cited by your correspondent, dating back the invention to 1814, only go to prove that, in common with other important inventions, it has undergone a natural term of obscurity, and that he, like ourselves, only contributed to the ultimate success of the plan. Every item named as original introductions, with one exception, was practically familiar to ship-builders long before the date of Mr. Jordan's alleged invention. The butt joint, as applied by him, we admit to be novel, but so totally impracticable and inefficient, as to have been discarded in probably every instance where such vessels have been built. So far from the engravings in your paper having been copied from his filed drawings, as Mr. J. would suggest, they were made from photographs of models prepared by us to illustrate our essential differences from the officially published specification and drawings, and to refute the charge of infringement; which, however, was not defended, as, at an early stage of the proceedings the Judge determined upon